



A Case Report on Hepatitis B Induced Hepatocellular Carcinoma

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ABSTRACT

Infection with the hepatitis B virus is one of the most important risk factors for hepatocellular carcinoma (HCC). Many factors contribute to hepatitis B virus (HBV) associated to hepatocellular carcinoma, including components of HBV, viral DNA integration, chromosomal instability, mutation and host susceptibility. Here we present a case of 65-year-old male patient with complaints of breathlessness and pain in abdomen in the last 1 month. On examination, abdomen showed tenderness. He was tested Hepatitis B surface antigen positive and abdomen CT revealed HCC, cholecystitis and distal common bile duct calculus. Patient underwent Endoscopic Retrograde Cholangiopancreatography (ERCP) for cholecystitis. Patient was advised to take opinion from oncologist for further medical care, but they opted for palliative care.

Keywords: Hepatitis B virus (HBV), Hepatocellular carcinoma (HCC), Hepatitis B surface antigen (HBS-AG), Endoscopic Retrograde Cholangiopancreatography, Palliative care

INTRODUCTION

Chronic infection of Hepatitis B is considered as major risk factor in the initiation and development of Hepatocellular carcinoma (HCC). Hepatocellular carcinoma is one of the most common and aggressive malignancies leading to second highest cause of cancer worldwide^[1]. Hepatitis B virus infection accounts for nearly 60% of Hepatocellular carcinoma cases in Asia and Africa and 20 percentage of cases in west side countries. Hepatitis B virus is a DNA virus that integrate into the genome inducing insertional mutagenesis leading to oncogene activation. The major risk factor for hepatocellular carcinoma includes chronic alcoholic consumption, diabetes, obesity related non-alcoholic steatohepatitis and infection by Hepatitis B virus or Hepatitis C virus. Other less prevalent risk factor of hepatocellular carcinoma includes cirrhosis from primary biliary cholangitis, haemochromatosis and Alpha-1 antitrypsin deficiency^[2].

CASE PRESENTATION

A 65 years old male patient was admitted to hospital with chief complaints of breathlessness, weakness all over the body, patient had history of fever, pain in abdomen in the past one month, Patient was not having other co-morbidities. On examination Blood pressure was 130/70 mm of Hg, Pulse rate 111 beats per minute, and saturation 85 Percentage under room air. On systemic examination patient had a tinge of scleral jaundice, Pale, Central nervous system – drowsy, P/A – Tenderness positive, Respiratory sound – Bilateral crept positive, Pallor was positive. Abdominal Ultrasound showed: Acute calculus Cholecystitis with gall bladder sludge with dilated intra hepatic biliary radicals with dilated proximal common bile duct (1.83 cm), Mild Hepatomegaly, Large ill-defined heterogenous mass in right lobe of liver (Hepatoma). Chest X-Ray showed bilateral heterogenous opacity. A complete blood count showed an elevated white blood cells 46400 cell per cubic millimeter, low hemoglobin 6.9 grams per deciliter. C- Reactive protein was 333.7 milligrams per deciliter. The peripheral smear showed microcytic hypochromic anemia with neutrophilic leukocytosis and thrombocytopenia. On liver functions showed, Total bilirubin 2.2 milligram per deciliter, Aspartate transaminase 104.3 units per liter, Alanine transaminase 44 units per liter, Alkaline phosphatase 272.3 units per liter, Gamma glutamyl transferase 142.7 units per liter. Renal function test and electrolytes were normal. An initial viral screen was positive for hepatitis B surface antigen and negative for hepatitis C and human immunodeficiency virus tests. A follow up viral profile depicted a chronic infection with high infectivity evidence by presence of the surface antigen (HBS-AG). His viral load was 2053 copies per milliliter. Computerized tomography Brain was done as the patient was complaining of weakness of overall body, Computerized tomography shows; Acute subdural hemorrhage in left fronttemporoparietooccipital region. Abdomen computerized tomography was also done it showed; Large heterogenous lesion measuring 12-centimeter x 8 centimeter is seen in IV A and VIII of liver suggestive of Hepatoma, Calculus cholecystitis, distal common bile duct calculus. Sputum test was done it showed negative. Final diagnosis was Hepatitis B surface antigen – positive associated hepatocellular carcinoma with obstructive jaundice. Patient was advised to undergo endoscopic retrograde cholangiopancreatography procedure, the impression showed common bile duct calculus, endoscopic papillotomy done, common bile duct clearance achieved, single 7 French x 7- centimeter double pigtail plastic stent deployed in common bile duct. Patient was advised Injection Pipzo (piperacillin/Tazobactam) 4.5 gram thrice a day, Tablet Amoxiclav (Amoxicillin/clavulanate potassium) 625

milligrams thrice a day, for breathlessness Injection hydrocortisone 200 milligrams twice and Nebulization Duolin and Budecort is prescribed. For Activated partial thromboplastin clotting time (APTT) and International normalized ratio (INR) correction fresh frozen plasma and injection tranexamic acid 500 milligrams were given. To treat anemia and thrombocytopenia 1 PINT packed red blood cells, 2 PINT random donor platelet and multi vitamin injection administered two days, for cerebrovascular accident Injection Phenytoin, Nimodipine, Glycerol was prescribed. Patient advised to take opinion from oncologist. Patient attender refused for further medical care and opted for home palliative care.

DISCUSSION

Chronic Hepatitis B virus infection is one of a major etiological factor predisposing to hepatocellular carcinoma (HCC).

There are majorly three reported mechanisms by which Hepatitis B virus promotes carcinogenesis.

- Hepatitis B virus proteins are involved in many signaling pathways in hepatocytes there by affecting the expression and function of specific genes, contributing to liver disorders. Most of these changes are associated with Hepatocellular carcinoma (HCC)^[3]. The serum Hepatitis B virus DNA levels itself is an important risk factor in progression of chronic hepatitis B. An elevated serum Hepatitis B virus DNA level (Greater than or equal to 10000 copies/ml) is strong independent predictor of Hepatocellular carcinoma (HCC)^[4].
- Several studies have suggested that the integration of Hepatitis B virus DNA into the host DNA can lead to rearrangement of chromosomes, deregulation and instability of gene expression contributing to oncogenesis^[3,4].
- Inflammation-mediated alteration of specific signaling pathways contributes to tumorigenesis.

Our patient was tested Hepatitis B surface antigen (HBS-AG) positive and had features of liver decompensation and ultrasound rightly described Hepatocellular carcinoma (HCC) on a cirrhotic background. Primary prevention for Hepatitis B virus related Hepatocellular carcinoma (HCC) is Hepatitis B virus vaccination of uninfected individuals. Secondary prevention of Hepatitis B virus related Hepatocellular carcinoma is anti-viral therapy for those already infected with Hepatitis B virus. The current mainstay of treatment for Hepatitis B virus is anti-viral therapy that targets the viral reverse transcriptase. Several anti-Hepatitis B virus drugs such as Lamivudine, Adefovir, Entecavir, Telbivudine^[4] are used to eradicate or suppress the viral replication.

In our case the patient was aged and the survival chances were poor. However, the patient attenders refused further medical care and opted for home palliative care.

CONCLUSION

Hepatitis B virus infection is a risk factor for hepatocellular carcinoma (HCC) especially in developing countries. Hepatitis B virus induced hepatocellular carcinoma often emerges from a chronically diseased liver. Where, hepatitis B virus and its viral products plays a role during each of the stages of hepatocarcinogenesis. Pharmacist can play an achieve role in prevention of this disease through bring awareness among general public regarding importance of vaccination program especially to high-risk population and also should develop social awareness to identify Hepatitis B patients at an earliest and implement an effective anti-viral therapy to eradicate disease before it leads Hepatocellular carcinoma.

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