

# Hepatocellular Carcinoma – Family History Can't Be Missed

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## 1. Abstract

**1.1. Introduction:** Hepatocellular Carcinoma (HCC) is one of the most common malignant tumours in the world. The various risk factors include hepatitis B & C viruses, alcohol, metabolic syndrome including diabetes mellitus, chemicals, and inborn and acquired metabolic disease. HCC is closely associated with hepatitis B and C virus because liver injury caused by viral factor affects many cellular processes such as cell signaling, apoptosis, transcription, DNA repair which in turn induce important effects on cell survival, growth, transformation and maintenance.

**1.2. Case Report:** We report a forty-seven-year-old female, not a known case of any chronic illness presented with vague right hypochondriac pain, nausea and anorexia of one month duration. She was started on proton pump inhibitor and analgesic but due to non-response was subjected to ultrasonography which revealed some mass lesion in right lobe of liver and left kidney. Hence for confirmation, computed tomography scan was done which reconfirmed the ultrasonographic findings but was not able to rule out malignancy. Hence patient was subjected to positron emission tomography scan (PET scan) which confirmed it to be metabolically active lesion and biopsy was advised which turned out to be hepatocellular carcinoma. The family history was positive and mother had died of HCC but no definitive aetiology could be pin-pointed. The patient was referred for medical and surgical oncological consultation but later on lost to follow-up.

**1.3. Conclusion:** Hepatocellular carcinoma can have different manifestations varying from development in background of chronic liver disease which has prolonged history or can present as acute onset with shorter history, as seen in our case. Family history merits detailed evaluation, as it is well known risk factor for causing HCC.

## 2. Keywords

Hepatocellular carcinoma, Familial, Hepatitis B Virus, Hepatitis C Virus, MASH, Idiopathic

## 3. Introduction

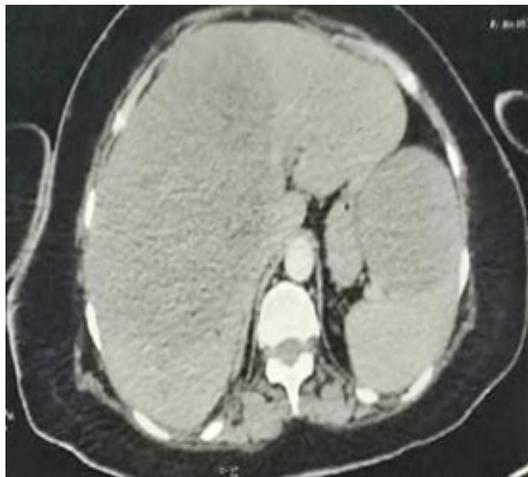
Liver cancer which is one of the leading causes of cancer deaths worldwide has recently recorded annual death toll with 700,000 around the globe [1]. Hepatocellular Carcinoma (HCC) forms the major chunk (75% -90%) of primary liver malignancies [2]. Most cases of HCC (75% to 90%) develop in cirrhosis resulting from chronic infection by hepatitis B virus and hepatitis C virus, alcoholic injury, Metabolic associated steatotic liver disease (MASLD) and to a lesser extent from genetically determined disorders such as hemochromatosis [3-5]. In last three decades, about 63% increase in total deaths has been reported globally because of viral hepatitis. Hepatitis B and C infections accounted for most of the morbidity and mortality since it leads to progressive hepatic damage in patients and ultimately causing cirrhosis and hepatocellular carcinoma [6]. The incidence of HCC increases with age in all populations and shows a slight decline in the elderly population. HCC shows a strong male preference. In low incidence regions, it is four times more common in males while in high prevalence areas, it is about eight times more common. It may be attributed to additional effect of other factors including higher levels of alcohol intake and smoking coupled with a higher incidence of cirrhosis in males. Animal experiments have suggested the role of sex hormones and/or hormone receptors. Orchidectomy reduces the carcinogenic effects of chemicals in male rats to the level found in females. A similar effect has been observed with stilbesterol or oestradiol pellets' implantation but the effect was comparatively less. [7]. In western countries, inborn errors of metabolism and congenital abnormalities have also contributed towards HCC in some cases [8].

## 4. Case Report

We report a forty-seven-year-old female, not a known case of any chronic illness presented with vague right hypochondriac pain, nausea and anorexia of one month duration. There was no history of fever, weight loss, haematemesis, melena, altered sleep pattern or behaviour, bladder or bowel symptoms, breathlessness on exertion or rest. On biochemical evaluation complete hemogram was normal, liver function test was deranged i.e. there was mild hyperbilirubinaemia and transaminitis. The complete lipid profile, renal function test, serum electrolytes and blood sugar level were in normal range. The viral screen and autoimmune profile were negative. Alpha feto protein level (AFP) was significantly raised to 18,000 I.U. The ultrasonogram abdomen revealed some mass

## ANNALS OF MEDICAL AND CLINICAL CASES

lesion in right lobe of liver and left kidney. Hence for confirmation, computed tomography scan was done which reconfirmed the ultrasonographic findings but was not able to rule out malignancy. Hence patient was subjected to positron emission tomography scan (PET scan) which confirmed it to be metabolically active lesion and biopsy was advised which turned out to be hepatocellular carcinoma. The family history was positive and mother had died of HCC but no definitive aetiology could be pin-pointed. The patient was referred for medical and surgical oncological consultation but later on lost to follow-up.



**Figure 1:** CECT Scan abdomen showing lesions in right lobe of liver and left kidney



**Figure 2:** PET scan showing metabolic active lesions in liver and left kidney

## 5. Discussion

Hepatocellular carcinoma (HCC) is a highly prevalent cancer globally, occupying the sixth place and was the third leading cause of cancer death worldwide in 2020 [9]. Viral hepatitis, alcohol consumption and aflatoxin exposure are the most important risk factors for the development of HCC [10]. In countries where vaccination against hepatitis B virus (HBV) is widely available,

alcohol-related HCC can be more prevalent [11]. In the last decades, non-alcoholic fatty liver disease (NAFLD), now called as MAFLD has become a more prevalent risk factor for HCC due to the rise of obesity and metabolic syndrome in this country [12]. Early detection of HCC is likely beneficial, and prognosis can be calculated using tumour characteristics, clinical parameters, or both. HCC accounts for 70% of primary liver cancers and is the sixth most common cancer worldwide [9-11,13]. It is the third leading cause of cancer-related deaths in the world [10-12]. It is more common in men and the average age at diagnosis is 50 – 70 years [10-11] which is in alignment with our study group of 80 patients, in which majority of patients were males and above fifty years of age. The male predominance was more significantly in HBV group than HCV group. Africa and Asia account for 80% of all HCC cases, with Asia bearing approximately 72.5%. This is thought to be due to their high rates of HBV infection, as well as high rates of aflatoxin exposure [10,11,14]. Limited access to HBV screening, vaccination, and treatment also plays a role [15]. A largest prospective and geographically diverse study of a U.S. cohort of patients with cirrhosis that validates known risk factors for HCC (gender, age, obesity, years with cirrhosis, family history of liver cancer, baseline AFP, albumin, and AST). The incidence of HCC was 2.4% per 100 person-years [16].

## 6. Conclusion

Hepatocellular carcinoma can have different manifestations varying from development in background of chronic liver disease which has prolonged history or can present as acute onset with shorter history, as seen in our case. Family history merits detailed evaluation, as it is well known risk factor for causing HCC.

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