

Case Study

<https://doi.org/10.20546/ijcmas.2025.1403.005>

## Deadly and Catastrophic Face of Chronic Hepatitis B

Chitrakshi Bhardwaj, Parveen Malhotra<sup>id</sup>\*, Vani Malhotra, Pranav Malhotra,  
Navya Malhotra and Ritwik Gupta

Department of Medical Gastroenterology and Obstetrics & Gynaecology, PGIMS, Rohtak, Haryana,  
VMCC & Safdarjung Hospital, HIMSAR, Hamdard Medical College & HAHC Hospital, New Delhi India

\*Corresponding author

### ABSTRACT

Hepatitis B virus (HBV) impacts large number of populations worldwide and has both hepatic and extrahepatic manifestations. It can present as acute hepatitis, chronic hepatitis, cirrhosis and hepatocellular carcinoma (HCC). The available data provide evidence that HBV infection is associated with the risk of developing HCC with or without an underlying liver cirrhosis, due to various direct and indirect mechanisms promoting hepatocarcinogenesis. We report a twenty-three-year-old male, not a known case of any chronic illness presented with distension of abdomen. On evaluation he was diagnosed to be having hepatitis B related cirrhosis of liver with hepatocellular carcinoma with portal vein thrombosis. His ultrasonogram showed altered echotexture of liver with suspicious lesions in both lobes of liver with ascites and portal vein thrombosis. On subjecting to Triple phase Computed tomography scan confirmed ultrasonography findings and suspicious lesions showed enhancement on arterial phase and wash out on venous and portal phase. His liver function tests were deranged, Alpha feto protein level (AFP) was significantly raised to 1050 I.U. and HBV DNA quantitative was one lakh I.U/ml. He was unmarried and on family screening his mother was found to be chronic hepatitis B but in inactive carrier stage. Hepatitis B has many presentations varying from inactive carrier stage in majority to cirrhosis and H.C.C but presenting for first time with H.C.C in such a young age is not common, thus making treating health professionals for becoming more vigil for such deadly and acute catastrophic face of Hepatitis B.

#### Keywords

Chronic hepatitis B,  
Hepatocellular  
carcinoma, vertical  
transmission,  
Ascites, Portal Vein  
thrombosis

#### Article Info

Received:  
15 January 2025  
Accepted:  
28 February 2025  
Available Online:  
10 March 2025

### Introduction

HBV infection has become major health problem in developing country like India which has many hotspots like Haryana, Punjab, Uttar Pradesh, Uttarakhand, North eastern states and Hepatitis B Surface Antigen (HbsAg) positivity varies between 2–4.7% (Abraham, 2012;

Thyagarajan *et al.*, 1996). In India, approximately 40 million people are chronically infected with Hepatitis B (Dutta, 2008). The major routes of transmission of Hepatitis B include vertical transmission, unsafe needle & sexual practices, repeated exposure to blood & blood products like who receive repeated transfusion of blood, are on maintenance haemodialysis, intravenous drug

abusers, males having sex with male, female sex workers, sexual partners & care takers of HBV patient and prisoners (Sarin *et al.*, 2019). The molecular profile of HBV-HCC is extensively and continuously under study, and it is the result of altered molecular pathways, which modify the microenvironment and lead to DNA damage. HBV produces the protein HBx, which has a central role in the oncogenetic process. Proper management of the underlying HBV-related liver disease is fundamental, including HCC surveillance, viral suppression, and application of adequate predictive models. When HBV-HCC occurs, liver function and HCC characteristics guide the physician among treatment strategies (Rizzo *et al.*, 2022).

## Case Report



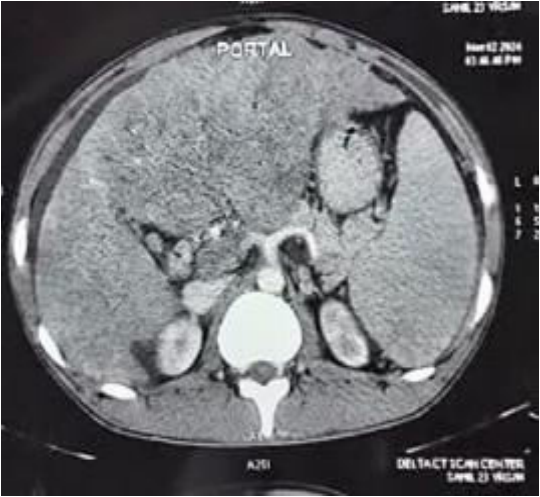
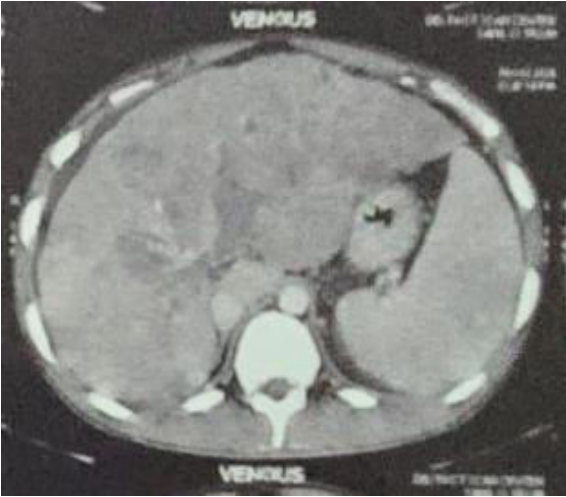
We report a twenty-three-year-old male, not a known case of any chronic illness presented with distension of abdomen. There was no history of fever, weight loss, haematemesis, melena, altered sleep pattern or behaviour, bladder or bowel symptoms, breathlessness on exertion or rest. On biochemical evaluation he had pancytopenia on complete hemogram, liver function test was deranged i.e. there was low albumin level, mild hyperbilirubinemia, raised transaminitis with reversal of ratio of AST being more than ALT and increased INR. The lipid profile showed lower values of all parameters including total cholesterol, triglycerides, LDL, VLDL and HDL levels. His renal function test, serum electrolytes and blood sugar level were in normal range. The viral screen was positive for HbsAg and anti HCV antibody, anti-HIV antibody, Serum IgM HAV & HEV antibody test were negative, Alpha fetoprotein level (AFP) was significantly raised to 1050 I.U. and HBV DNA quantitative was one lakh I.U./ml. His ultrasonogram showed altered echotexture of liver with suspicious lesions in both lobes of liver with gross ascites and portal vein thrombosis. Triple phase Computed tomography scan confirmed ultrasonography findings and suspicious lesions showed enhancement on arterial phase and wash out on venous and portal phase. Diagnosed to be having hepatitis B related cirrhosis of liver with hepatocellular carcinoma with portal vein thrombosis. He was unmarried and on family screening his mother was found to be chronic hepatitis B but in inactive carrier stage. Liver transplant surgeon and surgical oncologist were consulted who ruled out liver transplantation or any other intervention, in view of multiple lesions in both lobes of liver with cirrhotic background. He was started on diuretics, rotatory oral

antibiotics, multivitamins, calcium & Vitamin D3 supplementation, lactulose, high vegetable protein and fluid restricted diet. He came for consultation for next two months but then was lost to follow up.

## Results and Discussion

The World Health Organization (WHO) aims at reducing HBV infections by 90% and increasing global vaccine coverage to 90% (WHO, 2017) for which health awareness is mandatory regarding hepatitis B prevention, screening, and vaccination (Cohen *et al.*, 2011). The HBV infection behaves like tip of iceberg where 90% of patients are unaware about it, thus remain undiagnosed and in future can progress to cirrhosis, and HCC (Stanaway *et al.*, 2016). Liver cancer is important cause of mortality associated with cancer pan globally with annual death toll of 700,000 (Ferlay *et al.*, 2012). Hepatocellular Carcinoma (HCC) represent the major variety of primary liver malignancies and is responsible for 70% to 85% of the total liver cancer burden (El-Serag, 2011). The maximum cases of hepatocellular carcinoma (75% to 90%) develop in cirrhotic liver caused by various factors like chronic HBV & HCV, alcohol, obesity and diabetes mellitus, autoimmune hepatitis or hemochromatosis (Bosch *et al.*, 2005; El-Serag and Rudolph, 2007; Yang and Roberts, 2010). In last three decades, about 63% increase in total deaths has been reported globally because of viral hepatitis HBV & HCV infections because it leads to continuous liver damage which gradually progresses to cirrhosis and H.C.C (Stanaway *et al.*, 2016). HCC has occurred even at two years of age in areas with high prevalent rate and its incidence increases with age in all populations. HCC has a male predominance. The greater exposure of HBV & HCV infection and aflatoxin in African and Asian countries is an important reason for detection of 80% of all HCC cases from these areas (Konyn *et al.*, 2021; Massarweh and El-Serag, 2017; Forner *et al.*, 2018).

The areas with less screening & vaccination and limited availability of treatment are detrimental in control of HBV infection (Sayiner *et al.*, 2019). The incidence of HCC in chronic HBV & HCV infection is 44%, and 21% respectively. In our case, uncommon thing was its first presentation with abdominal distension and on evaluation, all complications in form of H.C.C in bilateral lobes with portal vein thrombosis was detected which rendered the patient out of any option of liver transplantation, surgical intervention or Trans arterial chemoembolization (TACE) in view of decompensation.

<p><b>Figure.1</b> Showing Gross Ascites</p>	<p><b>Figure.2</b> Showing HCC in Arterial Phase</p>
	
<p><b>Figure.3</b> Showing HCC in Portal Phase</p>	<p><b>Figure.4</b> Showing HCC in Venous Phase</p>
	

The mother was found to be also suffering from hepatitis B, vertical transmission was most probable cause in the patient for developing HBV infection. It lays stress on mandatory screening of every pregnant woman for HBV, starting of antiviral treatment in seventh month of pregnancy, if female has high HBV viral load and hepatitis B immunoglobulin 0.5 ml to newborn within 12 hours of birth, along with zero dose HBV, followed by full course of HBV. These are all recommendations of WHO.

Hepatitis B has many presentations varying from inactive carrier stage in majority to cirrhosis and H.C.C but

presenting for first time with H.C.C in such a young age is not common, thus making treating health professionals for becoming more vigil for such deadly and acute catastrophic face of Hepatitis B.

**Author Contributions**

Chitrakshi Bhardwaj: Investigation, formal analysis, writing—original draft. Parveen Malhotra: Validation, methodology, writing—reviewing. Vani Malhotra:— Formal analysis, writing—review and editing. Pranav Malhotra: Investigation, writing—reviewing. Navya Malhotra: Resources, investigation writing—reviewing.

Ritwik Gupta: Validation, formal analysis, writing—reviewing.

### Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

### Declarations

**Ethical Approval** Not applicable.

**Consent to Participate** Not applicable.

**Consent to Publish** Not applicable.

**Conflict of Interest** The authors declare that there was no conflict of interest or any kind of funding was taken for publishing this case report.

### References

- Abraham P. Viral Hepatitis in India. *Clin Lab Med.* 2012;32(2):159–174. <https://doi.org/10.1016/j.cll.2012.03.003>
- Bosch F X, Ribes J, Cleries R, Diaz M. Epidemiology of hepatocellular carcinoma. *Clin Liver Dis* 2005; 9:191–211. <https://doi.org/10.1016/j.cld.2004.12.009>
- Cohen C, Holmberg S D, McMahon B J, Block J M, Brosgart C L, Gish R G *et al.*, Is chronic hepatitis B being undertreated in the United States? *J Viral Hepat.* 2011 Jun;18(6): 377-83. <https://doi.org/10.1111/j.1365-2893.2010.01401.x>
- Dutta S. An overview of molecular epidemiology of hepatitis B virus (HBV) in India. *Virology* 2008; 5:156. <https://doi.org/10.1186/1743-422x-5-156>
- El-Serag H B, Rudolph K L. Hepatocellular carcinoma: epidemiology and molecular carcinogenesis. *Gastroenterology* 2007; 132:2557–2576. <https://doi.org/10.1053/j.gastro.2007.04.061>
- El-Serag H B. Hepatocellular carcinoma. *N Engl J Med* 2011; 365:1118–1127. <https://doi.org/10.1056/nejmra1001683>
- Ferlay J, Soerjomataram I, Dikshit R, *et al.*, Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. *Int J Cancer* 2015; 136(5): E359-86. <http://dx.doi.org/10.1002/ijc.29210> (PMID: 25220842)
- Forner A, Reig M, Bruix J. Hepatocellular carcinoma. *Lancet.* 2018;391(10127):1301-1314. [https://doi.org/10.1016/s0140-6736\(18\)30010-2](https://doi.org/10.1016/s0140-6736(18)30010-2)
- Konyn P, Ahmed A, Kim D. Current epidemiology in hepatocellular carcinoma. *Expert Rev Gastroenterol Hepatol.* 2021;15(11):1295-1307. <https://doi.org/10.1080/17474124.2021.1991792>
- Massarweh N N, El-Serag H B. Epidemiology of Hepatocellular Carcinoma and Intrahepatic Cholangiocarcinoma. *Cancer Control.* 2017;24(3):1073274817729245. <https://doi.org/10.1177/1073274817729245>
- Rizzo G E M, Cabibbo G, Craxì A. Hepatitis B Virus-Associated Hepatocellular Carcinoma. *Viruses.* 2022 May 7;14(5):986. <https://doi.org/10.3390/v14050986>. PMID: 35632728; PMCID: PMC9146458
- Sarin S K, Dhiman R K, Eapen C A, *et al.*, Technical Guidelines for Diagnosis & management of Hepatitis 2019; National Viral Hepatitis Control Program, India.
- Sayiner M, Golabi P, Younossi Z M. Disease burden of hepatocellular carcinoma: a global perspective. *Dig Dis Sci.* 2019;64(4):910-917. <https://doi.org/10.1007/s10620-019-05537-2>
- Stanaway J D, Flaxman A D, Naghavi M, *et al.*, The global burden of viral hepatitis from 1990 to 2013: Findings from the global burden of disease study 2013. *Lancet* 2016; 388(10049): 1081-8. [http://dx.doi.org/10.1016/S0140-6736\(16\)30579-7](http://dx.doi.org/10.1016/S0140-6736(16)30579-7) (PMID: 27394647)
- Thyagarajan S P, Jayaram S, Mohana Valli B. Prevalence of HBV in general population in India. In: Sarin SK, Singal AK, Editors. *Hepatitis B in India: problems and prevention.* New Delhi: CBS; 1996. p. 5–16.
- World Health Organisation. *Global Hepatitis Report.* 2017
- Yang J D, Roberts L R. Hepatocellular carcinoma: A global view. *Nat Rev Gastroenterol Hepatol* 2010; 7(8): 448-58. <http://dx.doi.org/10.1038/nrgastro.2010.100> (PMID: 20628345)

**How to cite this article:**

Chitrakshi Bhardwaj, Parveen Malhotra, Vani Malhotra, Pranav Malhotra, Navya Malhotra and Ritwik Gupta. 2025. Deadly and Catastrophic Face of Chronic Hepatitis B. *Int.J.Curr.Microbiol.App.Sci.* 14(03): 28-32.

**doi:** <https://doi.org/10.20546/ijemas.2025.1403.005>