

## Hepatocellular Carcinoma Presenting As Right Heart Failure – An Uncommon Presentation

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**Abstract:** *Hepatocellular carcinoma, the most common primary hepatic tumour, is seen in association with alcoholic cirrhosis in majority of the cases. The disease is more common in males. Clinical features include insidious onset of malaise, abdominal pain, fever with an elevation of alpha feto protein level. We present a case of a 50 year old male patient who presented with clinical features of right heart failure of short duration. On investigation he was found to have a large hepatocellular carcinoma with inferior vena cava tumour thrombus extending into right atrium resulting in right heart failure.*

**KEY WORDS:** *Hepatocellular Carcinoma(HCC), Inferior Vena Cava(IVC), Right Atrium, Shortness Of Breath, Thrombus.*

### I. INTRODUCTION

Hepatocellular carcinoma is one of the commonest visceral malignancies worldwide, usually presenting with insidious onset of symptoms. The clinical features mimic cirrhosis, however jaundice is rare. The liver function tests are normal. There may be history of alcoholic cirrhosis, hemochromatosis and steroid use[1]. HCC is usually associated with Hepatitis B and C viruses and exposure to aflatoxins. HCCs are mostly hyperechoic on ultrasonography and Colour Doppler helps in assessing the vascularity of the tumour. MDCT shows the most characteristic features of HCC in the form of early enhancement on arterial phase and washout on delayed phase. MRI will differentiate small Hepatocellular carcinoma from regenerative nodules of cirrhosis.

### II. CASE REPORT

A 50 year old male patient was admitted with history of shortness of breath, cough with expectoration and pedal edema of one month duration. Breathlessness was of grade II and there was no hemoptysis. He was a known alcoholic for the last 5 years. Routine biochemical tests were

normal. Chest radiograph showed hyperinflated lungs. ECG was normal. 2D Echo showed an ejection fraction of 72% with good LV function. Evidence of a large echogenic mass was seen extending from IVC into right atrium and then crossing into right ventricle. On ultrasonography heterogenous ill-defined mass was noted in right lobe of liver extending into middle hepatic vein and IVC(Figure 1). Moderate ascites was also present. MDCT Abdomen revealed an ill-defined, heterogeneously enhancing mass of size 6.7x6.6 cms in right lobe of liver. The mass showed early arterial phase enhancement and venous washout in delayed phase suggesting Hepatocellular carcinoma. Irregular enhancement noted along middle hepatic vein with few non enhancing areas suggestive of tumour thrombus in middle hepatic vein. Evidence of thrombus noted in IVC extending into right atrium showing mild enhancement with contrast in arterial phase(Figure 2,3,4). Few pleural and pulmonary nodules seen in both lungs.

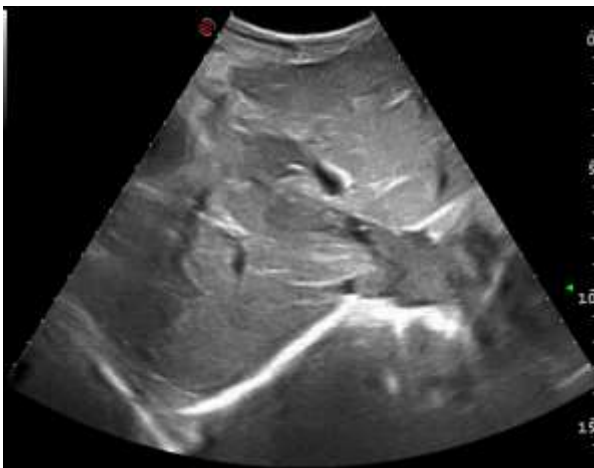


Figure 1. Ultrasonography image showing mass in right lobe of liver with IVC extension

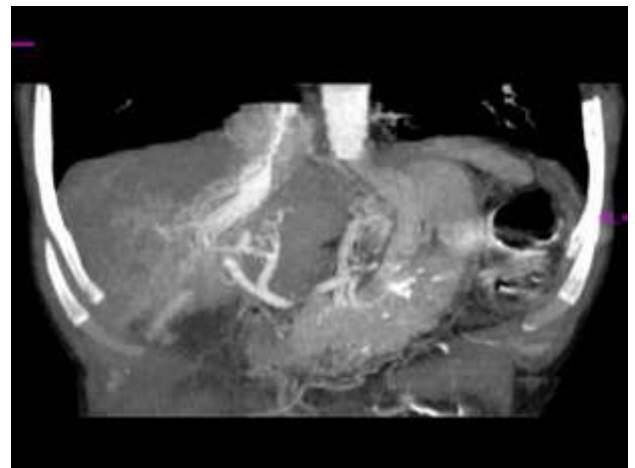


Figure 4 Coronal CECT Curved MPR image showing mass in right lobe of liver extending into IVC as tumour thrombus



Figure 2 Axial CECT Chest image showing tumour thrombus in right atrium

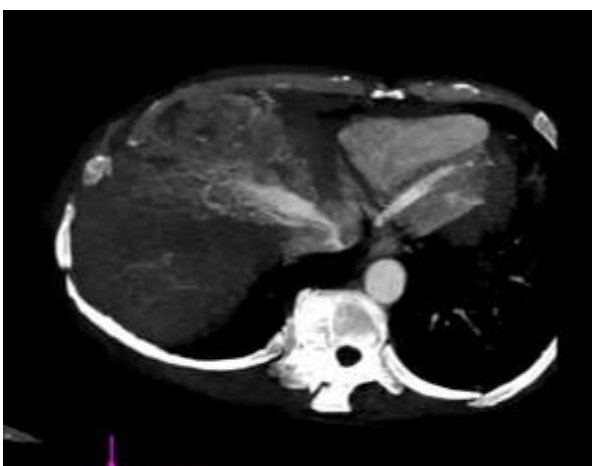


Figure 3 Axial CECT Curved MPR image showing mass in right lobe of liver extending into IVC as tumour thrombus

FNAC from the liver mass showed epithelial cells in sheets with pleomorphism, large hyperchromatic nuclei and prominent nucleoli with occasional mitotic activity in a hemorrhagic background s/o hepatocellular carcinoma (Figure 5). Hence final diagnosis was made as Hepatocellular carcinoma with tumour thrombus in IVC and right atrium.

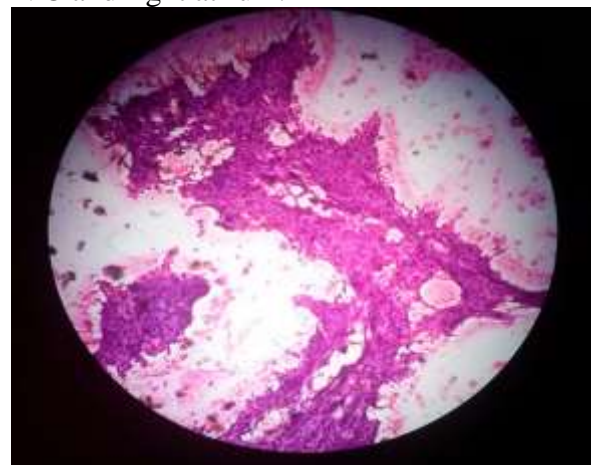


Figure 5 FNAC suggestive of hepatocellular carcinoma

### III. DISCUSSION

Hepatocellular carcinoma is known to invade adjacent portal veins, hepatic veins and biliary ducts. Extension of tumour thrombus into veins is identified by the presence of intraluminal low attenuation structures and dilatation of the veins. The incidence of hepatic vein thrombus in hepatocellular carcinoma is about 6% [2].

“Threads and streaks” sign is typical for intravenous tumour thrombus[3].

Hepatocellular carcinoma with extension of tumour thrombus into right atrium has already been reported in the literature[4,5,6]

Danielle[7] reported a case of HCC with extension of thrombus into right atrium who was relatively asymptomatic. Christian Steinberg[8] and Melody Oncale[9] reported cases of advanced hepatocellular carcinomas with occlusion of inferior vena cava and right atrium without any evidence of pre-existing liver disease. In another case reported by Hetal pandya[10] there was extensive tumour thrombus extending into right atrium without any cardiorespiratory distress.

In our present case patient presented with clinical features of right heart failure without any pre-existing liver disease. Only evaluation with 2D-echocardiography has lead to investigate the patient further. Advanced HCC has a poor prognosis with a survival less than 6 months. Treatment of HCC includes chemotherapeutic embolization and direct intratumoral injection of alcohol.

#### IV. CONCLUSION

The present case and similar other case reports suggest that advanced HCC can also present with cardiorespiratory illness with intravenous extension of thrombus into right atrium.

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