

# A large Right atrial mass in a patient with hepatocellular carcinoma: Case report and literature review



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**Background:** Hepatocellular carcinoma (HCC) is a common malignancy and the most frequent sites of metastasis include lungs, bone, lymphatic, and brain, however, Intra-cardiac involvement rarely develops in patients with HCC and it has poor prognosis. The clinical course may be complicated by many fatal cardiovascular complications. Absence of cardiac symptoms, however, is an unusual condition.

**Case report:** We reported a rare case of hepatocellular carcinoma with large invasion into the right atrium and no cardiac symptoms.

**Conclusion:** Cardiac metastases occur in 10% of all cancer patients. Heart involvement should be suspected in all patients.

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**Keywords:** Carcinoma, Hepatocellular, Heart atria, Heart neoplasms, Secondary, Vena cava and inferior

## Introduction

Cardiac tumors are a rare entity, comprised of tumors with diverse histology and natural history [1]. Cardiac tumors are classified into primary benign or malignant tumors that arise from the heart or into secondary, metastatic tumors that invade the heart. Primary cardiac tumors occur with a low incidence. It is estimated that secondary tumors are a hundred times more common than primary cardiac lesions [1–3].

Malignant tumors of various organs and tissues, originating from all over the body, may disseminate to the right atrium (RA) by a nodular embolus and rarely by direct extension. Current literature reports that malignant tumors, such as HCC, pancreatic carcinoma, adrenal carcinoma, testicular cancer, lymphoma, leiomyosarcoma, nasopharyngeal cancer, esophageal cancer, Ewing's sarcoma and Wilm's tumor can encroach on the RA [4]. Portal vein (PV), hepatic vein (HV), and the inferior vena cava (IVC) are often affected.

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On the other hand, HCC ranks as the eighth most common cancer, fifth among males and seventh among females [5]. In fact, HCC is the commonest primary tumor of the liver [6]. The highest incidence rates were in developing countries where infection with hepatitis B virus (HBV) is common [5]. Moreover, liver cancer is considered to be the third leading cause of cancer death with an estimated more than half a million deaths in 2007 [7]. The usual sites of HCC metastasis are lung, bone, and lymphnode [8]. However, cardiac metastasis from HCC is rare [9].

This case report demonstrates an unusual metastasis of HCC as a large mass in the right atrium of a patient diagnosed with Hepatitis B.

### Case report

In September 2012, a 70-year-old gentleman known to have Hypertension and hepatitis B virus carrier, most likely from remote blood transfusion more than 30 years ago, presented to the emergency department with history of right upper quadrant abdominal pain for 2 months, which was dull in nature, intermittent, with no specific

aggravating or relieving factors. This was associated with decreased appetite and weight loss. There were no nausea, vomiting, melena, hematemesis, dysphagia or fever. Patient denied any cardiac symptoms in form of shortness of breath, chest pain, orthopnea and PND. On physical exam, the patient looked cachectic, he was conscious, well oriented, not pale or jaundiced with no signs of chronic liver disease. Cardiac examination revealed normal heart sounds, abdomen was soft with liver span of 18 cm and palpable epigastric mass measured 6 × 6 cm not separable from the liver with no tenderness or ascites. No lower limb edema.

### Laboratory findings were as follows

White cell count (WCC): 2.70/mm<sup>3</sup>; hemoglobin (Hb): 13.3 mg/dL; platelet (Plt): 76,000/mm<sup>3</sup>; ESR 95 mm/h PT: 15.7 s; International normalized ratio (INR):1.23; total protein: 83 g/L; albumin: 27 g/L; aspartate aminotransferase (AST): 93 IU/L (N: 12-37); alanine transaminase (ALT): 54 IU/L (N: 20-65); ALP: 110 IU/L (N: 50-136); GGT: 75 IU/L (N:15-85); total bilirubin: 21 μmol/L (N: 3-117),

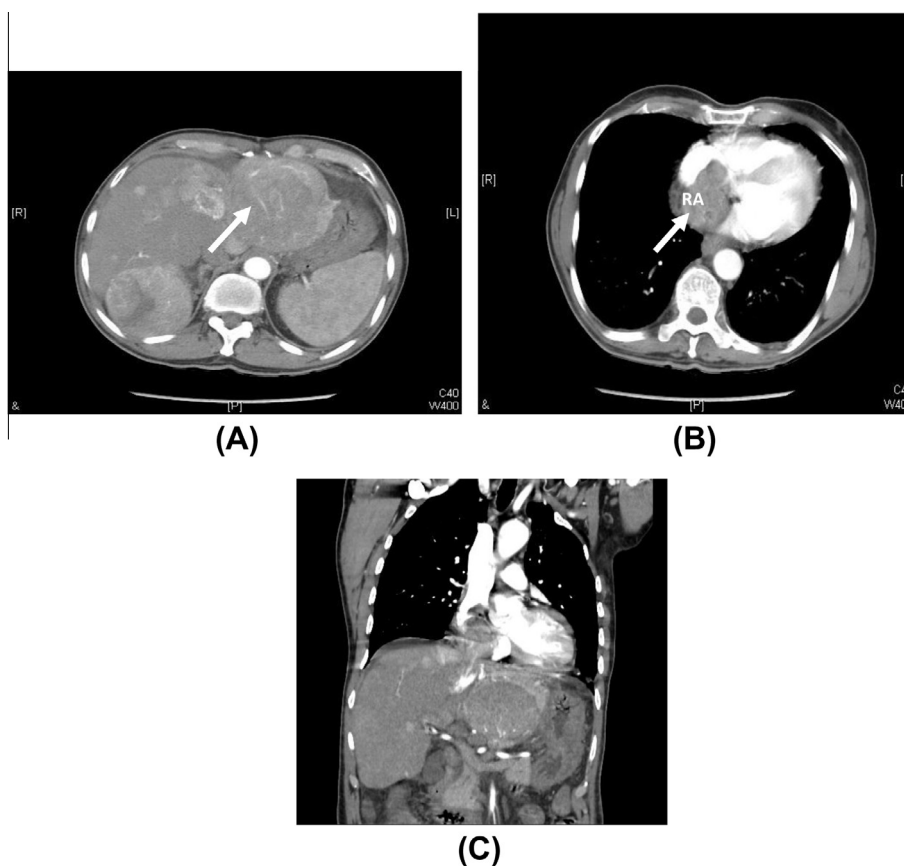


Figure 1. (A) CT scan of abdomen shows the hepatic mass. (B) CT scan of chest shows the Right atrial mass. (C) Coronal CT showing the extension of the tumor to RA (see arrows).

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