CARDIAC MRI: A CLINICAL DECISION-MAKING TOOL FOR ISOLATED RIGHT VENTRICLE MASS ASSOCIATED WITH HEPATOCELLULAR CARCINOMA

Sujeen Adhikari\textsuperscript{1} DO, MPH, Katarzyna Mikrut\textsuperscript{1} MD, Erik Skulborstad\textsuperscript{2} MD, and Patrycja Galazka\textsuperscript{2} MD.
\textsuperscript{1} Advocate Lutheran General Hospital, Park Ridge, Illinois
\textsuperscript{2} Aurora St. Luke's Medical Center, Milwaukee, Wisconsin
Introduction

• Hepatocellular carcinoma (HCC) is the most common primary malignancy of the liver and the sixth most common cancer worldwide.

• The primary sites of HCC metastasis are the lungs, lymphatic system, and bone. Only about 6% of the HCC metastasis is seen in the right atrium (RA).

• There have been even fewer incidences of right ventricle (RV) metastasis of HCC without the involvement of RA and inferior vena cava (IVC).

• We present such a case of HCC with RV metastasis without RA and IVC involvement.
CASE

• A 62-year-old male with a past medical history of hepatitis-B infection, biopsy-proven HCC 7 years prior to presentation, currently in remission on chemotherapy who initially presented with dyspnea.

• Initially, an echocardiogram showed a 4.5 x 2 cm RV mass and normal IVC.
• Cardiac MRI showed a large 6.0 x 5.4 x 7.6 cm lobulated mass originating from the RV free wall with extensive intracavitary extension, extending through the tricuspid valve orifice and abutting the interventricular septum.

• The mass showed early perfusion with heterogeneous delayed enhancement. There was a mass effect upon the septum and left ventricular (LV) cavity and apparent partial obstruction of the right ventricular outflow tract without trans pericardial extension.
• Increased vascularity of the RV mass was seen without any evidence of atherosclerosis during the coronary angiogram.

• Intravenous biopsy of the RV mass showed metastatic carcinoma consistent with HCC
Learning Points

• Cardiac metastasis of hepatocellular carcinoma is uncommon.

• When it occurs, it usually represents the involvement of IVC with direct extension into the RA.

• In our case, portal hepatic venous system including the IVC was patent, suggesting a hematogenous spread of the metastasis.

• Cardiac MRI plays an incremental role in the evaluation of extension and characterization of cardiac masses. There are no specific guidelines in managing HCC metastasis to the RV. In such a scenario, imaging characteristics play an important role in clinical decision making.

• Our case demonstrated how cardiac MRI can guide the treatment approach to HCC metastasis to the right ventricle. Once the degree of tumor invasion was clearly demonstrated, the decision was made against tumor resection and palliative chemotherapy was initiated.

