Asymptomatic Metastasis of Hepatocellular Carcinoma into the Right Ventricular Cavity Presenting with Electrocardiographic Changes

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We report a 45-year-old woman with metastasis of hepatocellular carcinoma into the right ventricular cavity. She was asymptomatic when the metastasis was found and the clinical clue was an ECG with low voltage in limb leads and diffuse T-wave inversion. Echocardiography and magnetic resonance imaging were performed for the abnormal ECG finding and a right ventricular tumor was identified. Although she was asymptomatic initially, she had progressive dyspnea three months later and received tumor resection and total cavo-pulmonary connection under cardiopulmonary bypass to relieve right outflow tract obstruction. The pathological examination of the resected tumor revealed metastatic hepatocellular carcinoma. Oral thalidomide was given. Four months later, she died from multiple organ failure.

Key Words: Hepatocellular carcinoma • Metastasis • Right ventricle • ECG

INTRODUCTION

Hepatocellular carcinoma (HCC) with intracavitary metastasis to the heart is not uncommon. The incidence of HCC with right atrial metastasis is less than 6% at autopsy. Reports in antemortem diagnosis of HCC with right ventricular metastasis without inferior vena cava and right atrial metastasis are rarer. The diagnosis of metastasis of HCC into cardiac cavity might be overlooked because the symptoms are neither apparent nor specific. When a patient with HCC complains of dyspnea, chest tightness, lower leg edema, unexplained arrhythmia or signs of embolism, intra-cardiac metastasis should be suspected. We report a patient with metastasis of HCC into the right ventricle (RV) cavity. She did not have cardiac symptoms initially and presented with low voltage in limb leads and diffuse T-wave inversion on electrocardiogram (ECG).

CASE REPORT

A 45-year-old woman who was a carrier of hepatitis B had a diagnosis of HCC. She received a right hepatic lobectomy and transarterial chemoembolization (TAE) half a year after the operation. She had outpatient follow-up thereafter and had an uneventful life. However, elevated alpha-fetoprotein level (544.18 ng/mL) was noted half a year after the TAE and triphasic computed tomography (CT) scan of the abdomen revealed a 1.3-cm hepatic tumor. She was admitted for another cession of TAE. The ECG on admission revealed low voltage in limb leads and diffuse T-wave inversion in II, III, aVF and precordial leads (Figure 1). She denied exertional dyspnea, chest tightness or syncope. No jugular vein engorgement