AUCTORES
Globalize your Research

Journal of General Medicine and Clinical Practice
Iveta Tasheva *

Open Access

Review Article

Hepatocellular Carcinoma with Right Atrial Metastasis

Iveta Tasheva [1]*, Irina Koleva- Ignatova [2], Nikolay Serafimov [2], Viktoriya Stancheva [2]

[1] Sofia University, University Hospital "Sofiamed" Sofia, Bulgaria,

[2] University Hospital "Sofiamed" Sofia, Bulgaria.

***Corresponding Author:** Iveta Tasheva, Sofia University, University Hospital "Sofiamed" Sofia, Bulgaria.

Received date: December 06, 2023; Accepted date: December 26, 2023; Published date: December 03, 2023

Citation: Iveta Tasheva, Irina Koleva- Ignatova, Nikolay Serafimov, Viktoriya Stancheva, (2023), Hepatocellular Carcinoma with Right Atrial Metastasis, *J. General Medicine and Clinical Practice*, 7(1); **DOI:10.31579/2639-4162/131**

Abstract

Cardiac tumours may be primary or secondary-metastatic (malignant).

Secondary cardiac tumours are much more common than primary cardiac tumours. Their frequency on large anatomical studies varies between 3.4% and 13.9%. Though cardiac metastases may originate from any malignant tumor, melanomas have the greatest propensity for cardiac involvement, and also carcinomas of the thorax, including breast, lung, and esophageal [12,13]. The routes of metastasis include direct invasion, hematogenous, lymphatic, or transvenous, especially through the inferior vena cava [9,10]. Cardiac involvement should be suspected or sought in any patient with a known malignancy who develops new cardiovascular signs or symptoms. Imaging methods - echocardiography, computed tomography (CT) and MRI, are essential in establishing the diagnosis and the invasion of the tumour in the cardiac cavity. The severe evolution of secondary cardiac tumors depends on the extension of the primary tumour, but also on the severity of the clinical cardiac manifestations. Generally, the treatment is surgical. A correct diagnosis is important in the clinical setting since cardiac metastases are able to induce sudden cardiac death1.

Primary hepatocellular carcinoma (HCC) is the sixth cause of cancer in the world and the second cause of cancer mortality worldwide, with more than 830,000 deaths recorded annually2.

We present a case of HCC growth into the vena cava inferior (VCI) and invasion into the right atrium (RA).

Kew Words: cardiac tumours; hepatocellular carcinoma; right atrium invasion

Abbreviations and Acronyms:

HCC- Hepatocellular carcinoma

VCI-vena cava inferior

RA-right atrium

TTE- transthoracic echocardiogram

CT- computed tomography

Introduction

A 60-year-old man recently diagnosed with cirrhosis and HCC, secondary to hepatitis B, presented to the cardiology department for dyspnea and new onset bilateral lower extremity edema, rapidly progressing over 2 weeks. The patient is receiving treatment with Lamivudine 100mg.

The patient`s hemodynamic parameters showed regular sinus rhythm of 74 beats per minute, blood pressure of 130/80 mm Hg, heart sounds without murmurs and bilateral lower limb edema. There was no jugular venous distension, and his lungs were clear to auscultation.

Initial laboratory findings:

	n/unit	Reference range
Alkaline phosphatase (ALP)	1444 U/L	34-104 U/L
Total Bilirubin	16.6 mg/dL	0.3-1 mg/dL
Aspartate Aminotransferase (AST)	110 U/L	13-39 U/L
Alanine Aminotransferase (ALT)	30.6 U/L	7-52 U/L
GGT	361	8-61 U/L
International Randomized Ratio (INR)	1.3	0.8-1.1
Albumin	3.25 g/dL	3.5-5 g/dL

The ECG showed normal sinus rhythm.

The transthoracic echocardiogram (TTE) registered normal left ventricle systolic function without wall motion abnormality or significant valvular abnormality. Large echogenic 45/37mm mass, extending from the intrahepatic VCI to the RA, with no obstruction of the right ventricle. (Figure 1,2)

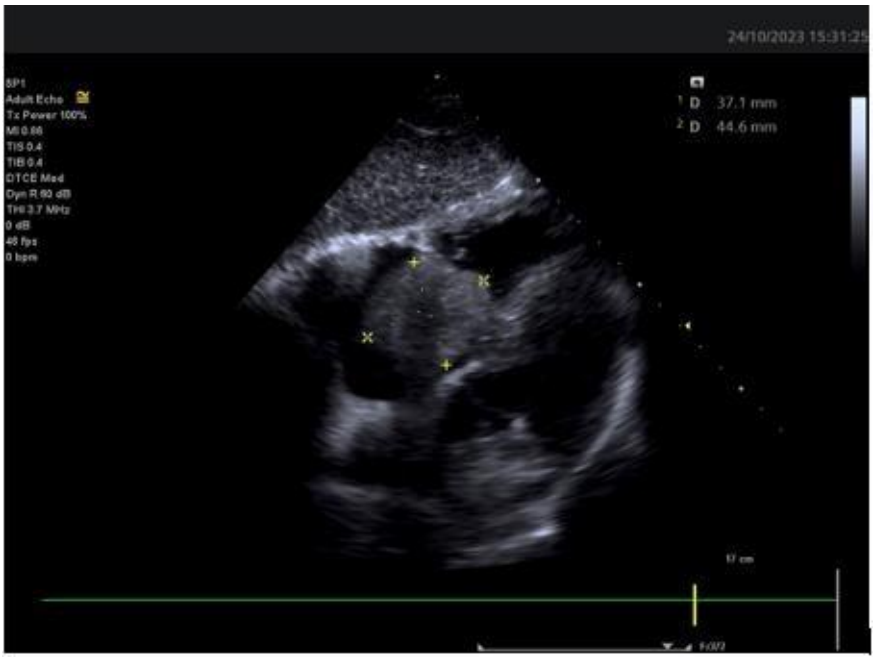

Figure 1: Huge right atrial mass

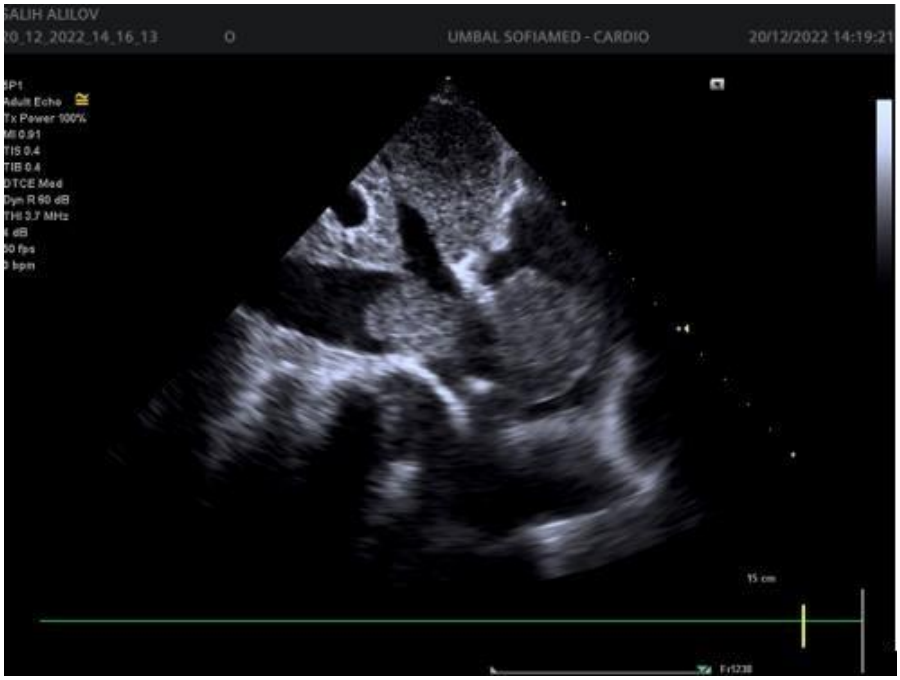

Figure 2: Mass extending from the intrahepatic VCI to the RA

CT scan of the chest and abdomen showed a large heterogeneous and rounded mass in the liver, with an axial diameter of 13.54 cm (Figure 3) and a coronary diameter of 13.84 cm (Figure 4); evidence of tumor extension to the adjacent VCI, reaching the RA (Figure 5); thrombosis of the two common iliac arteries, the external and internal iliac veins on the right, as well as the proximal 4.71 cm of the VCI (Figure 6); small amount of perihepatic ascites, and pulmonary nodules.

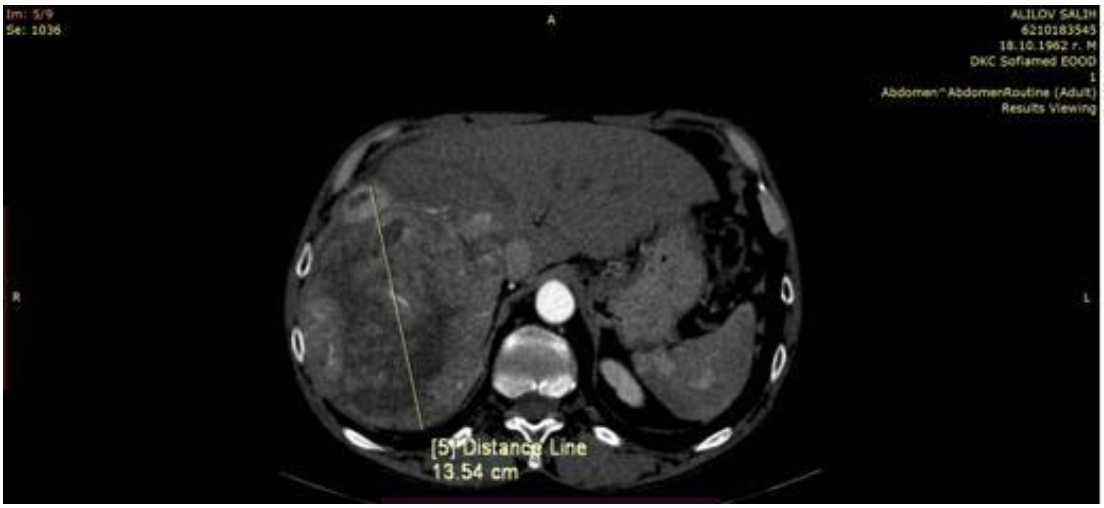

Figure 3.

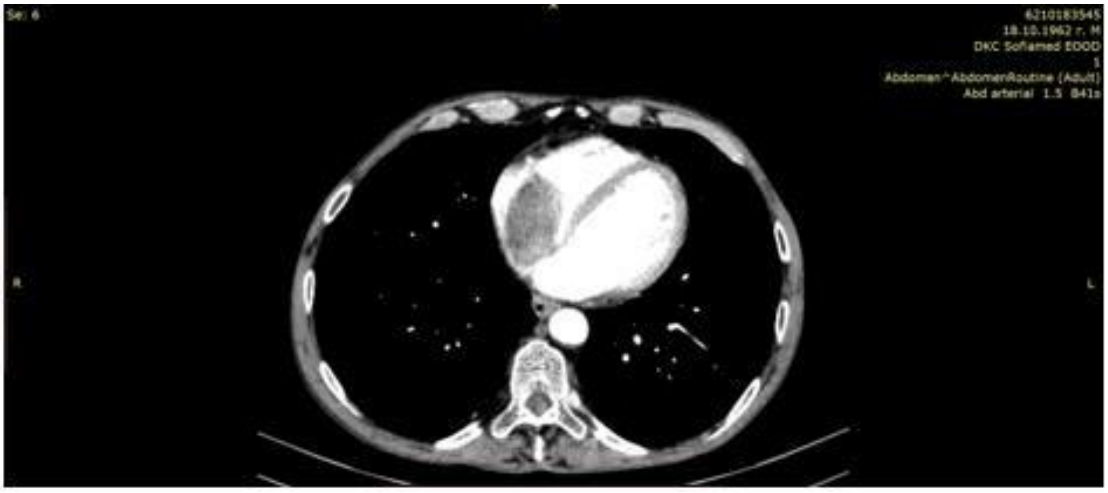

Figure 4.

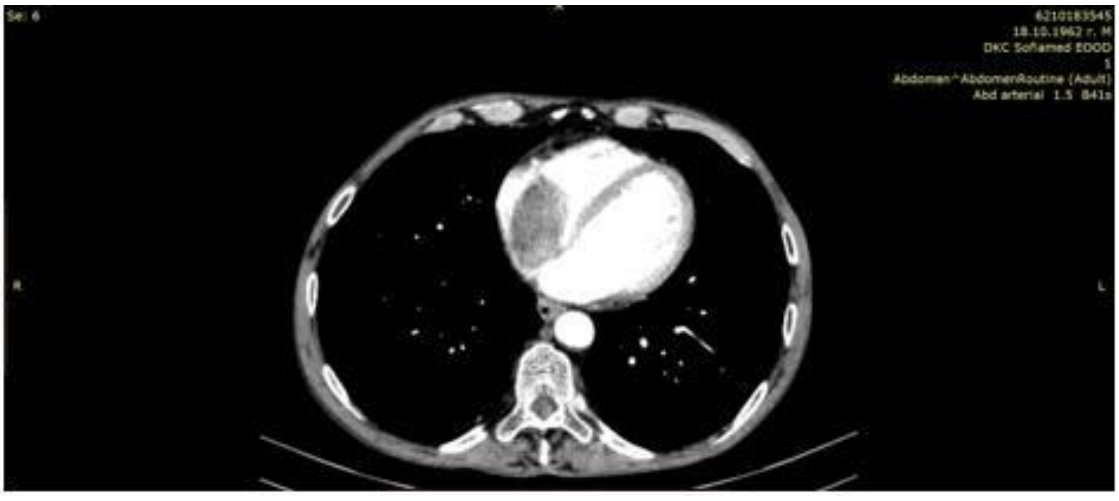

Figure 5.

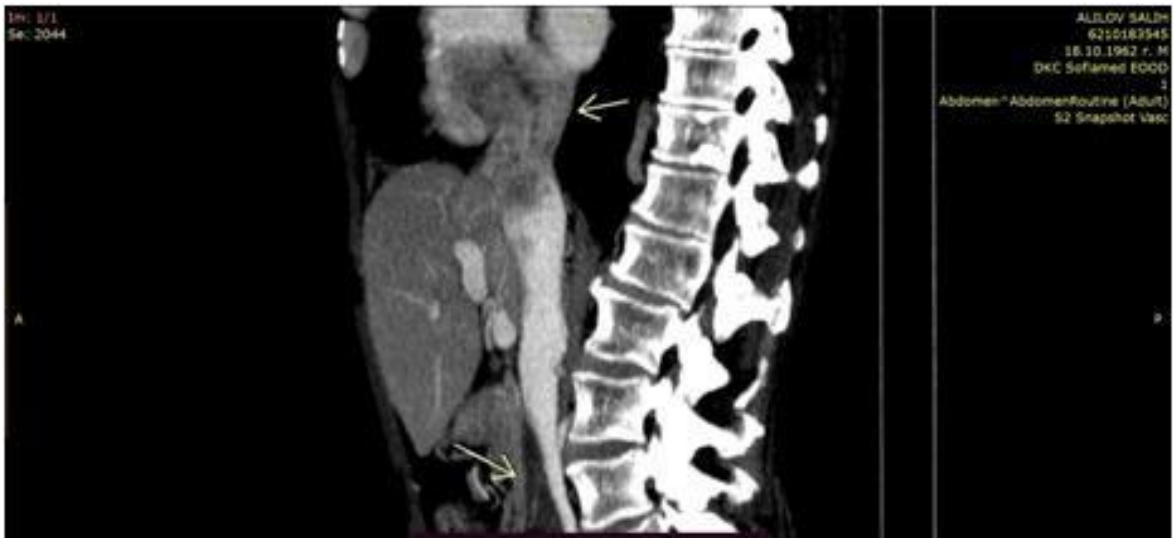

Figure 6.

The CT scan was followed by a multidisciplinary discussion. Due to the advanced stage of the disease, it was concluded that the patient is indicated for palliative care. Tumor resection and liver transplantation are some of the treatment methods used in such cases, but their prognosis remains poor, with a median survival of only a few months [3,4,5]. Some of the limiting factors of surgical intervention include poor hepatic reserve, potential postoperative complications, and early recurrence [6,7].

Transarterial chemoembolization, chemotherapy and radiotherapy are some of the potential treatment options, to relieve symptoms and improve quality of life [4,5,11]. The multimodality of cardiac imaging is important, because the diagnosis may be overlooked due to non-specific symptoms. Screening TTE is recommended in patients with HCC, even in the absence of cardiac manifestations. HCC with right atrial metastasis is associated with a high risk of cardiopulmonary complications, tricuspid stenosis or insufficiency, ventricular outflow obstruction, cardiac arrhythmias, pulmonary embolism, pulmonary metastases, heart failure or sudden death.

Conclusion:

HCC with VCI and RA invasion has a poor prognosis and leads to an increased risk of cardiac death. It is rare and difficult to diagnose and treat8, because of the absence of cardiac manifestations. Severe myocardial damage caused by the tumor mass may occur, impairing cardiac function gradually without specific symptoms. Our clinical case shows that intrahepatic HCC can disseminate and invade the heart. This aims to highlight the importance of maintaining regular screening TTE for metastases in patients with HCC, so that we can detect the early stages of the disease and initiate the treatment.

References:

1. Proff. Dorobantu, “Compendiu de boli cardiovasculare”
2. https://www.wcrf.org/
3. Sung AD, Cheng S, Moslehi J, Scully EP, Prior JM, et all., (2008). Hepatocellular carcinoma with intracavitary cardiac involvement: a case report and review of the literature. *Am J Cardiol.*

4. Li W, Wang Y, Gao W, Zheng (2017). HCC with tumor thrombus entering the right atrium and inferior vena cava treated by percutaneous ablation. J. *BMC Surg;*17:21.
5. Chang JY, Ka WS, Chao TY, Liu TW, Chuang TR, et all., (2004). Hepatocellular carcinoma with intra-atrial tumor thrombi. A report of three cases responsive to thalidomide treatment and literature review. *Oncology.*
6. Sun N, Zhang J, Li B, Li A, Lv M, et all., (2021). Favorable response to multimodal treatment in hepatocellular carcinoma with inferior vena cava and right atrial tumor thrombus and left adrenal gland metastasis: *a case report and literature review.;*100:0
7. Is it possible? Invasion of the heart with hepatocellular carcinoma in a short time
8. Cardiac Metastasis After Curative Treatment of Hepatocellular Carcinoma: Assessment of Risk Factors, Treatment Options, and Prognosis
9. Mallapasi MN, Kusumanegara J, Kabo P, Usman U, Mulyono MT, ET ALL., (2021). Cardiac metastasis of triple-negative breast cancer mimicking myxoma: A case report. *Int J Surg Case Rep*; 88:106552.
10. Burazor I, Aviel-Ronen S, Imazio M, (2018). Metastatic cardiac tumors: from clinical presentation through diagnosis to treatment. *BMC Cancer*. 18(1): 202
11. Wakayama K, Kamiyama T, Yokoo H, et al. (2013) Surgical management of hepatocellular carcinoma with tumor thrombi in the inferior vena cava or right atrium. *World J Surg Oncol;* 11:259
12. Al Mamgani A, Baartman L, Baaujens M, de Pree I, Incrocci L, ET ALL., (2008). Cardiac metastases. *Int J Clin Onclol*. 13(4):369–372
13. Vlachostregios P, Daliani D, Papandreou C. (2012). Basic Concepts in metastatic cardiac disease. *Cardiol Res.* 3(2):47–48

DOI:10.31579/2639-4162/131