Advanced hepatocellular carcinoma extending to the inferior vena cava and right atrium

**S. M. Habib, L. C. W. De Jonge, R. A. Carels, C. Verveer,
A. A. M. Zandbergen**

ABSTRACT

Abstract is not required for Clinical Images

International Journal of Case Reports and Images (IJCRI)

International Journal of Case Reports and Images (IJCRI) is an international, peer reviewed, monthly, open access, online journal, publishing high-quality, articles in all areas of basic medical sciences and clinical specialties.

Aim of IJCRI is to encourage the publication of new information by providing a platform for reporting of unique, unusual and rare cases which enhance understanding of disease process, its diagnosis, management and clinico-pathologic correlations.

IJCRI publishes Review Articles, Case Series, Case Reports, Case in Images, Clinical Images and Letters to Editor.

Website: www.ijcasereportsandimages.com

CLINICAL IMAGES

PEER REVIEWED | OPEN ACCESS

Advanced hepatocellular carcinoma extending to the inferior vena cava and right atrium

S. M. Habib, L. C. W. De Jonge, R. A. Carels, C. Verveer,
A. A. M. Zandbergen

CASE REPORT

A 65-year-old Surinamese male visited our outpatient clinic due to fatigue and weight loss of five kilograms in the last three months. The patient was diagnosed with chronic hepatitis B five years ago for which he did not receive treatment. Furthermore, he was a moderate alcohol drinker (1 drink/day) and had a 40 pack-year history of smoking. At physical examination, a cachectic man was seen with a blood pressure of 109/67 mmHg and a pulse rate of 84 beats per minute. He had no signs of jaundice. Physical examination of the abdomen revealed distended superficial abdominal veins and an enlarged liver, but no signs of ascites. Laboratory testing revealed a normal hemoglobin level of 9.9 mmol/L, an elevated bilirubin level of 95 μ mol/L, an elevated alpha-fetoprotein level of 36 μ g/L, and elevated liver enzymes (alanine aminotransferase 91 U/L, gamma glutamyl transferase 576 U/L, and alkaline phosphatase 245 U/L).

Subsequently, a computed tomography (CT) scan was performed, showing a large mass in the right lobe of the liver extending to the caudal lobe with occluded portal vein branches. Importantly, the mass was found to be invasive, compressing the vena cava inferior, and extending into the right atrium (Figure 1). No sign of liver cirrhosis were seen on computed tomography (CT) scan.

S.M. Habib¹, L.C.W. De Jonge², R.A. Carels¹, C. Verveer³,
A.A.M. Zandbergen¹

Affiliations: ¹Department of Internal Medicine, Ikazia Hospital, Rotterdam, The Netherlands; ²Department of Radiology, Ikazia Hospital, Rotterdam, The Netherlands; ³Department of Gastro-Enterology, Ikazia Hospital, Rotterdam, The Netherlands.

Corresponding Author: Sayed Meelad Habib, PhD, Department of Internal Medicine, Montessoriweg 1, 3083 AN, Rotterdam, The Netherlands; Email: s.m.habib@erasmusmc.nl

Received: 11 October 2014
Accepted: 06 February 2015
Published: 01 April 2015

A magnetic resonance imaging (MRI) scan was performed to establish a final diagnosis. MRI scan confirmed the presence of a 13.5x8.4 cm mass in segment 6 and 7 of the liver with a tumor thrombus invading the inferior vena cava (Figure 2) and right atrium.

DISCUSSION

Hepatocellular carcinoma (HCC) is frequently a fatal malignancy and accounts for the majority of cases

Figure 1: Computed tomography scan showing a mass extending into the right atrium.

Figure 2: Magnetic resonance imaging scan showing (A) Early arterial enhancement of the tumor mass in the liver invading the vena cava inferior (arrow), and (B) Fast washout of the enhancing lesion.

with primary liver cancer worldwide. The incidence of hepatocellular carcinoma (HCC) is low, however, seems to be as high as 11–20 cases per 100,000 male inhabitants in some countries [1].

Significant risk factors of HCC include chronic hepatitis B virus infection and other chronic liver diseases, usually in combination with cirrhosis [1, 2]. The most common locations of extrahepatic metastases of HCC include the lung, abdominal lymphnodes, and bones [3]. An initial presentation of HCC with tumor thrombus invasion in the vena cava inferior and right atrium is extremely rare (1–4%) and hazardous. An atrial thrombus can cause right heart failure and pulmonary embolism, and most patients die within the first year after diagnosis [4].

Establishing the diagnosis of HCC is a challenge, but preferably must be done based on non-invasive techniques, such as imaging (CT and/or MRI), in most cases without histological confirmation [2]. HCC in our patient was diagnosed based on the presence of the typical radiological criteria including the irregular tumor surface, the early arterial enhancement and the fast washout of tumor areas on the dynamic contrast-enhanced MRI scan.

The management of HCC requires a multidisciplinary approach and is closely linked to the stage of disease. Treatment options include radiofrequency ablation, partial liver resection, liver transplantation, systemic medical treatment (e.g., Sorafenib), and transcatheter arterial chemoembolization [2]. Given the limited treatment options and incurability of HCC with an atrial tumor, our patient was discharged from the hospital after one week with supportive care.

CONCLUSION

In conclusion, this case illustrates an uncommon presentation of advanced hepatocellular carcinoma (stage IIIC), which could be successfully diagnosed non-invasively by radiological imaging.

How to cite this article

Habib SM, De Jonge LCW, Carels RA, Verveer C, Zandbergen AAM. Advanced hepatocellular carcinoma extending to the inferior vena cava and right atrium. *Int J Case Rep Images* 2015;6(4):255–257.

doi:10.5348/ijcri-201516-CL-10071

Author Contributions

S. M. Habib – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for

important intellectual content, Final approval of the version to be published

L. C. W. De Jonge – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

R. A. Carels – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

C. Verveer – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

A. A. M. Zandbergen – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

Copyright

© 2015 S. M. Habib et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

REFERENCES

1. Venook AP, Papandreou C, Furuse J, de Guevara LL. The incidence and epidemiology of hepatocellular carcinoma: a global and regional perspective. *Oncologist* 2010;15 Suppl 4:5–13.
2. El-Serag HB. Hepatocellular carcinoma. *N Engl J Med* 2011 Sep 22;365(12):1118–27.
3. Katyal S, Oliver JH 3rd, Peterson MS, Ferris JV, Carr BS, Baron RL. Extrahepatic metastases of hepatocellular carcinoma. *Radiology* 2000 Sep;216(3):698–703.
4. Vallakati A, Chandra PA, Frankel R, Shani J. Intra-atrial tumor thrombi secondary to hepatocellular carcinoma responding to chemotherapy. *N Am J Med Sci* 2011 Sep;3(9):435–7.

Access full text article on
other devices

Access PDF of article on
other devices

Edorium Journals: An introduction

Edorium Journals Team

About Edorium Journals

Edorium Journals is a publisher of high-quality, open access, international scholarly journals covering subjects in basic sciences and clinical specialties and subspecialties.

Invitation for article submission

We sincerely invite you to submit your valuable research for publication to Edorium Journals.

But why should you publish with Edorium Journals?

In less than 10 words - we give you what no one does.

Vision of being the best

We have the vision of making our journals the best and the most authoritative journals in their respective specialties. We are working towards this goal every day of every week of every month of every year.

Exceptional services

We care for you, your work and your time. Our efficient, personalized and courteous services are a testimony to this.

Editorial Review

All manuscripts submitted to Edorium Journals undergo pre-processing review, first editorial review, peer review, second editorial review and finally third editorial review.

Peer Review

All manuscripts submitted to Edorium Journals undergo anonymous, double-blind, external peer review.

Early View version

Early View version of your manuscript will be published in the journal within 72 hours of final acceptance.

Manuscript status

From submission to publication of your article you will get regular updates (minimum six times) about status of your manuscripts directly in your email.

Our Commitment

Six weeks

You will get first decision on your manuscript within six weeks (42 days) of submission. If we fail to honor this by even one day, we will publish your manuscript free of charge.

Four weeks

After we receive page proofs, your manuscript will be published in the journal within four weeks (31 days). If we fail to honor this by even one day, we will publish your manuscript free of charge and refund you the full article publication charges you paid for your manuscript.

Mentored Review Articles (MRA)

Our academic program "Mentored Review Article" (MRA) gives you a unique opportunity to publish papers under mentorship of international faculty. These articles are published free of charges.

Favored Author program

One email is all it takes to become our favored author. You will not only get fee waivers but also get information and insights about scholarly publishing.

Institutional Membership program

Join our Institutional Memberships program and help scholars from your institute make their research accessible to all and save thousands of dollars in fees make their research accessible to all.

Our presence

We have some of the best designed publication formats. Our websites are very user friendly and enable you to do your work very easily with no hassle.

Something more...

We request you to have a look at our website to know more about us and our services.

We welcome you to interact with us, share with us, join us and of course publish with us.

Edorium Journals: On Web

Browse Journals

CONNECT WITH US