An 82-year-old man presented to the emergency department of the King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia, in 2013 with jaundice, bilateral lower limb oedema and dyspnoea. His laboratory test results were normal, except for elevated α-fetoprotein levels (258.3 μg/L). An ultrasound showed a right hepatic lobe hepatocellular carcinoma (HCC) in segments 6 and 7 of the liver, with tumour extension into the inferior vena cava (IVC) and a right atrial mass lesion.

An urgent computed tomography (CT) scan of the abdomen indicated that the HCC was located in the liver segments 6 and 7 and invading the right hepatic vein; in addition, the confluence of the IVC extended into the right atrium where a tumour thrombus was present [Figure 1]. An ultrasound-guided fine needle aspiration cytology biopsy also revealed the presence of an HCC. An echocardiogram showed sinus rhythm and a large mass in the right atrium occupying most of the cavity and extending into the IVC, causing...
flow obstruction. A CT scan and magnetic resonance imaging of the abdomen and chest showed the HCC migrating through the hepatic veins and the IVC to the right atrium, with a tumour thrombus in the right atrium [Figure 2]. After the diagnosis was made, the patient did not respond to treatment and died due to cardiopulmonary failure during the admission period.

Comment

The heart is affected in up to 20% of metastatic HCC cases. Although HCC has a tendency to spread into the venous system, intracardiac involvement is extremely rare and has a very poor prognosis. Metastasis to the heart can occur via the blood stream, the lymphatic system or direct invasion through the IVC to the right atrium, with the latter occurring in 6.5–44% of HCC patients. Such patients often exhibit symptoms of heart failure due to flow obstruction or a thromboembolism. Survival usually does not exceed four months, regardless of the type of treatment offered.

ACKNOWLEDGEMENTS

The authors wish to acknowledge the involvement of Dr Mohamed Neimatallah, Department of Radiology, King Faisal Specialist Hospital & Research Center, in the care of the reported patient.

References