

Isolated Rib Metastasis as the First Manifestation of Hepatocellular Carcinoma in a Chronic Alcoholic Patient a Rare Case Report and a Literature Review

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Summary

Hepatocellular carcinoma (HCC) is the most common primary tumor of the liver and is the fifth most common cancer in the world. Extrahepatic spread of HCC during presentation is seen in around 5 to 15% of patients. Skeletal metastasis of HCC less common and is a rare primary form of presentation. We report a case of HCC presenting with isolated right 4th rib metastasis, in a 60-year-old man presented with painless right chest wall swelling, loss of weight and decreased appetite. Histological Examination from chest wall swelling showed metastatic carcinoma, which on positive for IHC markers; Heppar, AE1, CD138 and negative for vimentin. The histopathology was suggestive of metastatic HCC or carcinoma with hepatoid differentiation. Tc99m MDP whole body bone scan revealed increase radiotracer concentration in anterior aspect of right 4th rib. CECT thorax-abdomen showed lytic lesion involving right 4th rib with diffuse alteration in liver parenchyma. Portal venous doppler reveals hepatomegaly with multiple hypoechoic lesion and regenerating nodule of cirrhotic liver with portal vein thrombus. HCC with isolated rib metastasis as a primary presentation is rare. Present case and review of literature reinforces the view that HCC should be considered in differential diagnosis in patients presenting with bone metastasis.

Keywords: Hepatocellular carcinoma, HCC, Ribs, Skeletal metastasis

Introduction

Primary cancer of the liver represents the fifth most common malignancy worldwide and is the second most common cause of death from cancer.¹⁻³ Three leading sites of metastasis in advanced hepatocellular carcinoma are: lung (44%), portal vein (35%), and portal lymph node (27%).³⁻⁶ Bone is an uncommon site of metastasis in hepatocellular carcinoma and is a site that is overlooked during investigation of patient. The incidence of bone metastasis is 3-20% in HCC with spine and pelvic bone being most common, and the prognosis is usually good in presence of isolated bone metastasis.⁶⁻⁷ We present a case of metastatic HCC who presented with a painless right 4th rib swelling.

Case Report

A 60-year-old man whose was smoker and alcoholic (20 unit/day alcohol for 30 years and 75 pack year smoking) presented to our centre with right chest wall swelling with decreased weight and appetite. On clinical examination patient had swelling over

anterior aspect of 4th rib. The laboratory studies showed: Hb - 10.90 g/dL; WBC - 8400/cmm; serum creatinine - 0.79 mg/dL; AST - 393.20 u/L; ALT - 50 U/L; ALP - 194.20 IU/L; total protein - 7.09 g/dL; albumin - 2.93 g/dl; total bilirubin - 5.60 mg/dl (DBIL - 4.40, IBIL - 1.20); SAFP - >1000 IU/ml; SPSA - 1.3 ng/ml.

CT thorax and abdomen showed lytic lesion with soft tissue swelling involving right 4th rib with intrapleural extension (Figure 1, 2). USG Guided biopsy was performed from 4th rib and histopathology showed features of metastatic carcinomas. IHC markers were suggestive of Metastatic HCC with hepatoid differentiation and were positive for hepatic marker Heppar, AE1, CD138, negative for vimentin. Whole body Tc99m MDP scintigraphy showed increased radiotracer concentration in anterior aspect of right 4th rib. (Figure 3) Patient underwent UGI endoscopy showed small oesophageal varices with mild PHG.

CT Abdomen showed liver parenchyma with diffused alteration with few nodular lesions in right upper lobe with mild perihepatic fluid collection suggestive of liver parenchymal disease. USG abdomen and pelvis showed liver is enlarged in size measured 17.9 cm and shows grossly altered echotexture, surface nodularity and irregularity with hypertrophied right lobe and atrophied left lobe. Liver had multiple hypoechoic areas with regenerative nodule; metastasis, with no dilation of IHBR. Portal vein measured 14 mm at porta on Doppler with echogenic material extending into right and left branches suggestive of thrombus. Visualised portal vein at confluence showed hepatopedal flow with reduced biphasic variation and velocity.

As per the investigation patients diagnosis of Child Pugh 'C' disease and stage IV disease was reached. As per multidisciplinary tumor discussion the patient was treated with best supportive care due to metastatic lesion. Patient was treated with Tablet Tamoxifen 40mg and Injection Zoledronic acid 4mg/100ml. Due to progressive disease patient died of disease after one month of treatment.

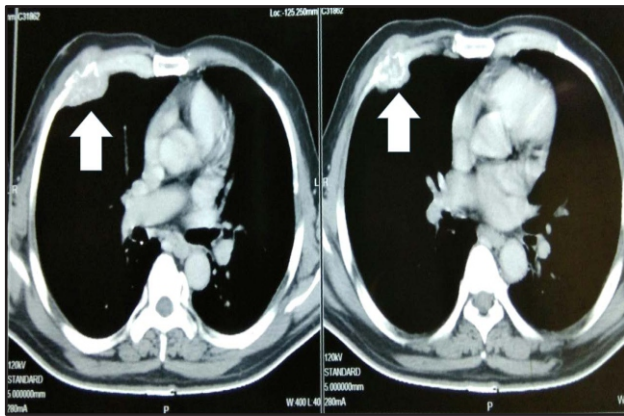


Figure 1: 4.3*3.55 cm osteolytic lesion in anterior aspect of fourth rib with surrounding soft tissue swelling with intrapleural extension; malignant bony lesion with surrounding soft tissue component. (White arrow over fourth rib lesion)

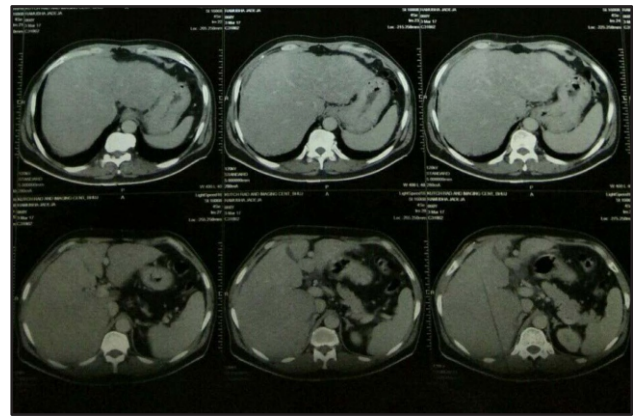


Figure 2: Moderate hepatomegaly with diffuse alteration of liver parenchymal density with few nodular lesion in right lobe

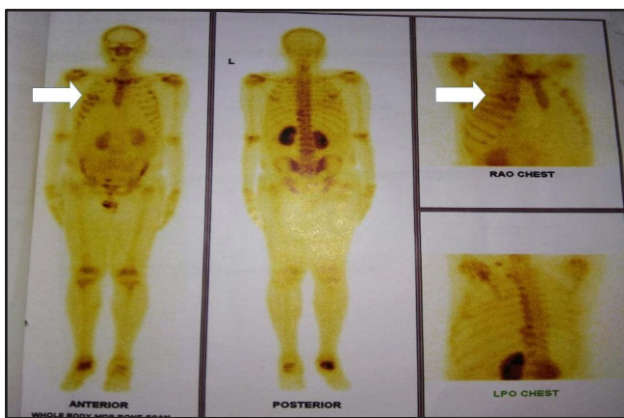


Figure 3: Whole body Tc99m MDP scintigraphy showed increased radiotracer concentration in right 4th rib anteriorly (White arrow over 4th rib)

Discussion

Hepatocellular carcinoma (HCC) is the fifth most common cancers worldwide. HCC metastasizes to the lung, portal vein, portal lymph nodes, rarely to bone and soft tissues.¹⁻⁷ Metastatic spread to bone is seen in 3-20% of HCC patients and the most common site of skeletal involvement in descending order are the vertebrae, pelvis, rib, skull, humerus and sternum.³⁻⁷ As per review of literature about the initial clinical presentation of unsuspected HCC associated with bone metastasis is uncommon. The review of literature showed isolated reports of vertebrae involvement. Most reported cases of sacral/lumbosacral metastasis were accompanied by multiple metastatic elsewhere in the body or previously known HCC. Isolated Rib metastasis from HCC as a primary presentation is a rare condition. In current study we have reported a patient who developed isolated rib metastasis from a hepatocellular carcinoma as a primary presentation. The treatment of extrahepatic metastasis is mainly depends on the clinical stage, Child Pugh

score and metastasis loci in order to prolong the survival of patients. Sugihara et al reported that for HCC patients with bone metastasis, combined treatment with radiation, zoledronate, and surgery, may possibly improve their quality of life resulting in a long clinical course. Metastatic HCC can be treated with surgery, followed by radio therapy, target therapy or other conservative treatments. The hypothesis for metastasis to the bone occurs via portal vein to vertebral vein plexuses (owing to either portal thrombus and/or portal hypertension which allows bypass through plexus), explaining the more frequent craniospinal and pelvic bone metastasis. HCC should be considered in the differential diagnosis in patient presenting with bone metastasis. Attili et al reported two cases of HCC with bone metastasis, first patient was 56 year old female with HCC having child Pugh 'A' disease with rib, clavicle, humerus, right femur and left tibia metastasis.⁷ This patient was treated with chemotherapy along with zoledronic acid.⁷ And second patient was 64 year old male HCC with child Pugh 'C' disease with vertebral and iliac bone metastasis did not received any therapy and died of progressive disease.⁷

Conclusion

HCC with isolated rib metastasis as a primary presentation is rare. Present case and review of literature reinforces the view that HCC should be considered in differential diagnosis in patients presenting with bone metastasis.

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