

Case report

Hepatocellular carcinoma – an unusual metastatic presentation on the chest wall

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Abstract

Hepatocellular carcinoma (HCC) is a common malignancy for which chronic hepatitis B infection has been defined as the most common etiologic factor. The most frequent metastatic sites are the lung, bone, lymphatics, and brain. Metastases to the chest wall have been reported rarely. We report a patient with HCC who presented with an isolated metastatic mass on the right chest wall. Metastasis of HCC should be included in the differential diagnosis of rapidly growing lesions in unusual locations, particularly in patients with chronic liver disease and HBsAg-positive patients, even if a primary tumor cannot be radiologically identified.

Key words: hepatocellular carcinoma, chest wall, metastasis.

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Introduction

Hepatocellular carcinoma (HCC) is the fifth most common malignancy worldwide, with distinct geographical variation [1]. Eighty percent of cases occur in the developing world, especially Southeast Asia and sub-Saharan Africa, where the major etiologic factor is exposure to hepatitis B virus (HBV) and hepatitis C virus (HCV). The other etiologic factors that are important in developed countries are cirrhosis, alcohol abuse, obesity, and hemochromatosis [2].

In general these tumors have a poor prognosis, compounded by the background liver disease in the majority of patients. The most common age of presentation is over 50 years, with a male to female ratio of about 3 : 1. Many of the patients have extrahepatic metastasis to lungs, lymph nodes, bones, and adrenal glands during the time of presentation [3].

We present a case with a huge isolated metastatic mass on the chest wall with a small primary focus, suggesting that metastatic foci can be more aggressive than the primary one in rare instances.

Case report

A 58-year-old man presented with the complaint of a painless mass over the right infraclavicular and anterior chest wall for the last 6 weeks. The patient reported that he had a history of minor trauma, which was managed conservatively with analgesics. Soon after the pain was resolved, he observed a small swelling over the right infraclavicular area. In view of his past history for the treatment of Pott's spine and tubercular psoas abscess 20 years and 15 years ago respectively, he was managed on anti-tubercular drugs by the general practitioner. Swelling was progressive even after taking AKT (anti-Koch's treatment) for 4 weeks; hence it was stopped and he was referred to us for further management.

Physical examination showed a globular swelling 10 × 9 cm in size, with a height of 5 cm above the chest wall (Fig. 1), over the right clavicular area and anterior chest wall. The swelling had a smooth surface, with firm to hard consistency and well-defined borders. Overlying skin was free but the base was fixed. Further clinical



Fig. 1. Swelling of 10 × 9 cm in size, with a height of 5 cm, over the right clavicular area and anterior chest wall



Fig. 2. Computed tomography (CT) scan showed a heterogeneous enhancing well defined soft tissue density lesion, involving the sternal end of right clavicle, with no calcification or ossification in the mass lesion

examinations showed nothing significant except the scar for the previous procedures for Pott's spine and psoas abscess. Laboratory studies showed raised liver function tests (SGOT: 113 IU/l, SGPT: 97 IU/l), and the patient was also found to be positive for hepatitis B surface antigen (HBsAg).

Computed tomography scan showed a heterogeneous enhancing well-defined soft tissue density lesion, involving the sternal end of the right clavicle with osteolytic destruction of the clavicle, with no calcification or ossification in the mass lesion (Fig. 2). The right lung showed a few lung nodules likely to be metastatic. Liver parenchyma also showed a single ill-defined, hypodense lesion, 4 × 2.5 cm, showing washout in the delayed phase in segment 5 of the

right lobe of the liver, likely to be a primary/metastatic lesion.

An incisional biopsy was taken from the swelling, which revealed features of metastatic adenocarcinoma most likely to be from liver, kidney and hepatoid yolk sac tumor (Fig. 3). To further confirm the diagnosis immunohistochemical studies were done and serum marker levels determined; the results were positive for HSA (Fig. 4) and Ki-67, focally positive for α -fetoprotein and CD10, negative for cytokeratins 7 and 20 and melan A, and raised for α -fetoprotein (20.10 ng/ml), while the β human chorionic gonadotropin (hCG) level was normal in the blood sample, which favored the diagnosis for metastatic hepatocellular carcinoma [4].

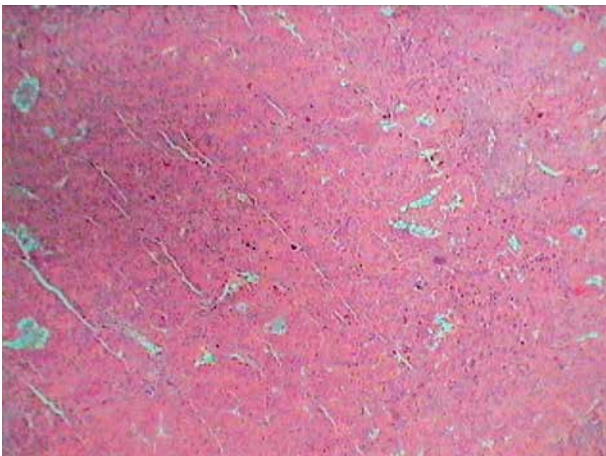


Fig. 3. Hematoxylin-eosin staining of the biopsy from the chest wall mass showing features of metastatic adenocarcinoma

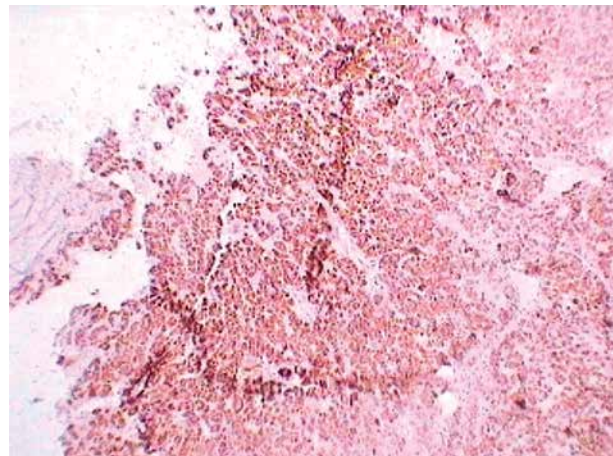


Fig. 4. Biopsy tissue showing positivity to HSA

He was managed with antiviral therapy and sorafenib. The disease progressed over the span of three months, the skin ulcerated and the patient had a sudden hemorrhage from the mass, leading to hypovolemic shock and death.

Discussion

Hepatocellular carcinoma has a definitive correlation with hepatitis B infection. The main etiological factors are HBV, HCV and alcohol-induced cirrhosis [2]. Hepatocellular carcinoma is usually asymptomatic at early stages and manifests with abdominal pain, weight loss, weakness, fullness and anorexia, abdominal swelling, jaundice, and vomiting as the disease progresses. Common physical signs include hepatomegaly, hepatic bruit, ascites, splenomegaly, jaundice, wasting, and fever. Hepatocellular carcinoma is usually at an advanced stage when discovered. Sometimes the presentation can be due to extrahepatic metastases. The most common sites of metastases of HCC include lung (55%), regional lymph nodes (41%), distant lymph nodes (12%), bones (28%), and other sites of metastasis including the adrenal gland (11%), peritoneum (11%), and brain (2%) [5].

There have been cases in the literature where there is metastasis to a rib or chest wall from hepatocellular carcinoma, but only one case where there was presentation as a chest wall tumor with unknown primary location [6]. Our patient had presented with a mass on the right chest wall which on biopsy proved to be metastatic adenocarcinoma. The patient had no symptoms of primary hepatic malignancy either clinically or on primary investigation. Diagnosis was confirmed by immunohistochemistry, and raised α -fetoprotein levels also favored the diagnosis of HCC.

Extrahepatic metastasis was observed in 18% of untreated patients in a retrospective study; metastatic lesions were found at a higher incidence rate in an autopsy study of deaths related to primary liver cancer [7, 8]. Metastases of HCC occur frequently by way of intrahepatic blood vessels, lymphatic permeation, or direct infiltration. Haematogenous spread occurs with the involvement of the hepatic and portal veins, or the vena cava. Metastases have also been found in collaterals and varices, and this appears to have been the route of metastasis in our patient reported here. Tumor cells might have passed through the right thoracic wall via portosystemic collaterals, the azygous system and finally intercostal veins. Another possible route is through subcutaneous collaterals communicating to thoracoepigastric veins and draining into the axillary vein.

Conclusions

Metastasis of HCC should be included in the differential diagnosis of rapidly growing metastatic lesions in unusual locations, particularly in chronic liver disease and HBsAg-positive patients, even if a primary tumor cannot be radiologically identified.

Disclosure

Authors report no conflict of interest.

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