Chest wall metastases from unknown primary hepatocellular carcinoma

Qureshi SS, Shrikhande SV, Borges AM*, Shukla PJ

ABSTRACT

Metastases of hepatocellular carcinoma (HCC) to the bones are common but bone metastases of hepatocellular carcinoma in the presence of a normal liver are an uncommon entity. A 50-year-old male patient presented with a rapidly growing tumour on the sternum. Biopsy of the lesion showed metastatic sternal tumour from a primary hepatocellular carcinoma. Radiological evaluation however, failed to detect a primary lesion in the liver. Bone metastases of hepatocellular carcinoma localized to the chest wall in the presence of a normal liver are scarcely reported as anecdotal case reports in the literature.

KEY WORDS: Chest wall tumour, hepatocellular carcinoma, metastasis

Bone metastases from hepatocellular carcinoma (HCC) are common and the incidence may range from 1 to 20%. Less frequently, bone metastases may be the first symptom of HCC. Deposits of HCC in bone, isolated or multiple, in the presence of a normal liver is exceptional. The rarity of this is evident from the fact that only four cases have been reported in the English literature.

We report and discuss a case of a 50-year-old man with HCC diagnosed from a lesion on the chest wall with a normal liver.

Case History

A 50-year-old man presented with a rapidly growing swelling over the sternum of two months duration. Except for this swelling, he had no other symptoms. Clinical examination revealed a 9 cm x 6 cm hard, fixed mass over the manubrium sterni. The overlying skin was erythematous with evidence of impending fungation. Thyroid gland, testes and regional lymph nodes were normal.

Computed tomography (CT) scan of the chest revealed an expansile destructive lesion of the upper sternum with extrathoracic as well as intrathoracic extension (Figure 1). A core biopsy of the lesion revealed presence of HCC without evidence of normal liver in the biopsy specimen (Figure 2). Immunohistochemistry showed tumour cell positive for α-fetoprotein (AFP), creatinine kinase (CK), and epithelial membrane antigen (EMA) and negative for vimentin and thyroglobulin.

Laboratory tests revealed a raised serum AFP (18302.8 ng/ml, normal range-0.5-35 ng/ml), normal serum beta HCG and liver enzymes. Hepatitis B surface antigen and hepatitis C virus antibodies were both negative. Scrotal ultrasound, done to rule out germ cell tumour of testes, revealed normal testes. A contrast enhanced CT scan of the abdomen revealed a normal liver with absence of mass lesion or coarse architecture or other obvious pathology in the liver. Skeletal scintigraphy showed increased uptake in the manubrium sternum, body of the left clavicle and left third rib anteriorly.

In view of the multiple bone lesions, only palliative radiotherapy (RT) was offered. The patient received 30 Gray external RT in 10 fractions via anterior portal and had a partial response, with reduction in the size of the lesion and erythema. He was started on tamoxifen and remained in good general health for three months, after which he...
been growing after spontaneous regression of intrahepatic and there is no case reported as yet where metastases have
ous regression of HCC is an extremely unusual phenomenon, symptomatic HCC is poor, 0.8% in men and 4.4% in women
six months of diagnosis. The five-year survival in patients with disease is rapid and if untreated most patients die within three to
time remains high, in the order of 50-75%. Of these, 40% are due to metastases and frequently multiple metastases are present.
In three to seven per cent cases of HCC, bone metastases represent the first symptoms of HCC.[1] Vertebrae, ribs, skull and long bones are the predominant sites of metastases and frequently multiple metastases are present.[4]
Bone metastases from unknown primary HCC are exceptional and only a few case reports have been documented.[1-4] The hypothesis put forth for this unusual entity is that either metastases are from a microhepatocellular carcinoma, which has been destroyed by the immune system or there is a spontaneous regression of HCC, or from HCC developing de novo in ectopic liver tissue.[1,2,5] Spontaneous regression of primary germ cell tumour is a well-documented entity but spontaneous regression of HCC is an extremely unusual phenomenon, and there is no case reported as yet where metastases have been growing after spontaneous regression of intrahepatic HCC.[1,5,6]
Ectopic liver is a rare developmental error where liver tissue rests are found outside the liver. They may be attached to the mother liver by a stalk in which case it is called as accessory lobe. Ectopic liver tissue has been reported from various sites near the liver, such as the gall bladder, hepatic ligaments, omen-
tum, retroperitoneum and the thorax.[6] The incidence of ectopic liver and accessory lobe in one study was 0.47% and 0.09% respectively.[5] Ectopic liver does not have a complete vascular and ductal system and when subjected to a carcinogenic factor might be functionally handicapped and more prone for hepatocarcinogenesis.[5]
In the present case, immunohistochemical staining for AFP, performed on formalin-fixed paraffin-embedded sections and a high serum level of AFP confirmed the hepatocellular nature of the tumour. The final diagnosis in our case was metastases from an unknown primary HCC. It is possible that a microhepatocellular carcinoma would have resulted in the bone metastases and the subsequent pulmonary metastases. The presence of multiple bone metastases probably excludes an ectopic HCC, as it is unlikely that an ectopic HCC of the sternum has metastasized to the bones in view of the very short history. Due to the small number of cases reported in the litera-
ure, the natural history of such lesions is not known, but aggressive treatment with combined modality has been per-
formed with good long-term survival for solitary metastasis.[1-4]

In conclusion, it is desirable to continue reporting new cases of this unusual entity as and when they occur in order to docu-
ment their natural history. Treatment strategies can be then better formulated for the best possible outcome.

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References

Discussion
HCC occurs frequently in sub-Saharan Africa. In Asia, the annual incidence is up to 500 cases per 100,000 population.[1]
However, in Western Europe and in the United States it is much less common, accounting for one to two per cent of all malignant tumours.[2] The course of clinically apparent disease is rapid and if untreated most patients die within three to six months of diagnosis. The five-year survival in patients with symptomatic HCC is poor, 0.8% in men and 4.4% in women after the onset of symptoms.[2]

Metastases by dissemination through blood stream, are encountered in the lung (49%), bone (16%), adrenal glands (15%), pancreas (4%), kidney (3%), and the spleen (2%) in autopsy series.[1] In three to seven per cent cases of HCC, bone metastases represent the first symptoms of HCC.[1] Vertebrae, ribs, skull and long bones are the predominant sites of metastases and frequently multiple metastases are present.[4]

In the present case, immunohistochemical staining for AFP, performed on formalin-fixed paraffin-embedded sections and a high serum level of AFP confirmed the hepatocellular nature of the tumour. The final diagnosis in our case was metastases from an unknown primary HCC. It is possible that a microhepatocellular carcinoma would have resulted in the bone metastases and the subsequent pulmonary metastases. The presence of multiple bone metastases probably excludes an ectopic HCC, as it is unlikely that an ectopic HCC of the sternum has metastasized to the bones in view of the very short history. Due to the small number of cases reported in the literature, the natural history of such lesions is not known, but aggressive treatment with combined modality has been performed with good long-term survival for solitary metastasis.[1-4]

In conclusion, it is desirable to continue reporting new cases of this unusual entity as and when they occur in order to document their natural history. Treatment strategies can be then better formulated for the best possible outcome.

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