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Subcutaneous Metastasis from Hepatocellular Carcinoma: An Unusual Case

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ABSTRACT

Hepatocellular carcinoma (HCC) is the most common primary malignancy of the liver, accounting for nearly 90% of all primary hepatic cancers. Its development is strongly associated with chronic liver disease, particularly chronic hepatitis B and C virus infections, and it most frequently occurs in patients with underlying cirrhosis. Although extrahepatic dissemination is a recognized feature of advanced HCC, metastatic involvement typically affects the lungs, regional lymph nodes, bones, and adrenal glands. In contrast, subcutaneous metastases are exceptionally uncommon and rarely constitute the initial presentation of the disease. Herein, we describe a rare case of HCC initially revealed by a subcutaneous metastatic lesion, underscoring the need to consider this unusual presentation in the differential diagnosis of soft tissue masses.

KEYWORDS

Hepatocellular carcinoma, subcutaneous metastasis, CT scan

MAIN ARTICLE

Introduction:

Subcutaneous and cutaneous metastases from hepatocellular carcinoma (HCC) are exceptionally uncommon manifestations of the disease. Clinically, these lesions often present as rapidly enlarging, painless nodules and may mimic a variety of benign or malignant conditions, including pyogenic granulomas, hemangiomas, or soft tissue abscesses, making diagnosis challenging [1, 2]. Although skin metastases are identified in only 0.6%–10.4% of patients with cancer and represent about 2% of all cutaneous tumors, involvement of the skin by hepatocellular carcinoma remains exceedingly rare. [3]

Recognition of this unusual metastatic pattern is important because it may signal advanced disease or, in rare instances, represent the first manifestation of an otherwise occult primary hepatic tumor. We report a case of hepatocellular carcinoma initially presenting as a subcutaneous metastatic lesion, highlighting the diagnostic value of imaging and histopathological confirmation in establishing the diagnosis.

Case report:

A 62-year-old man presented with a progressively enlarging, painless subcutaneous mass on the left thoracoabdominal wall that had evolved over one month, accompanied by generalized fatigue.

Physical examination revealed a firm, well-circumscribed mass without overlying skin changes or palpable regional lymphadenopathy.

Laboratory investigations showed mildly elevated liver enzymes and an increased serum alpha-fetoprotein level (27.2 ng/mL).

Abdominal ultrasound revealed a large heterogeneous hepatic mass occupying nearly the entire right hepatic lobe with focal extension into segment IVa, highly suggestive of hepatocellular carcinoma. Large-volume ascites was also noted. The spleen was normal in size, and the portal vein remained patent.

Contrast-enhanced thoracoabdominopelvic CT confirmed a large infiltrative hepatic mass measuring 13.5 cm, occupying almost the entire right hepatic lobe with focal extension into segment IVa. The lesion demonstrated heterogeneous arterial phase hyperenhancement with portal venous washout and small intralesional necrotic areas, findings consistent with hepatocellular carcinoma. CT also demonstrated a large enhancing subcutaneous soft-tissue mass of the left thoracoabdominal wall with destruction of the left tenth rib, right adrenal

metastasis, periportal and celiac lymphadenopathy, and massive ascites. No pulmonary metastases were identified.

An ultrasound-guided core needle biopsy of the thoracoabdominal wall mass was performed. Histopathological examination demonstrated metastatic hepatocellular carcinoma, consistent with the radiological findings.

Given the advanced stage of the disease and the presence of multiple extrahepatic metastases, curative treatment was not indicated. The patient received best supportive care, including symptomatic treatment and management of ascites, and was referred to the oncology department for palliative management.

Discussion:

Hepatocellular carcinoma (HCC) is the most common primary liver malignancy and is strongly associated with chronic liver disease. The major risk factors include chronic hepatitis B virus (HBV) infection, chronic hepatitis C virus (HCV) infection, and alcohol-related cirrhosis[4] .

Early-stage HCC is often clinically silent, whereas advanced disease may present with nonspecific symptoms such as abdominal pain, weight loss, fatigue, anorexia, abdominal distension, jaundice, and vomiting. Physical examination may reveal hepatomegaly, ascites, splenomegaly, cachexia, jaundice, or fever.

Because HCC frequently remains asymptomatic until an advanced stage, the diagnosis is often delayed. In some patients, the initial clinical presentation is related to extrahepatic metastatic disease rather than the primary hepatic tumor. The lungs are the most frequent site of metastasis (55%), followed by regional lymph nodes (41%), bones (28%), distant lymph nodes (12%), adrenal glands (11%), peritoneum (11%), and, less commonly, the brain (2%)[5].

Chest wall and rib metastases from hepatocellular carcinoma (HCC) have been occasionally reported in the literature. However, presentation as a chest wall mass leading to the diagnosis of the primary hepatic tumor remains exceptionally rare. [6] In our patient, the initial evaluation revealed a thoracoabdominal wall mass, while imaging simultaneously demonstrated a large hepatic lesion with radiological features typical of HCC.

Histopathological examination of the chest wall lesion confirmed metastatic hepatocellular carcinoma, and the elevated serum α -fetoprotein level further supported the diagnosis.

Extrahepatic metastases are observed in approximately 18% of patients with untreated hepatocellular carcinoma, while autopsy studies have reported even higher rates, reflecting the advanced stage of disease at the time of death. [7,8] Metastatic dissemination occurs predominantly through hematogenous spread, lymphatic invasion, or direct tumor extension. Hematogenous dissemination is facilitated by invasion of the portal or hepatic veins and the inferior vena cava. In rare cases, tumor cells may spread through portosystemic collateral vessels, including the azygos and intercostal venous systems, resulting in chest wall or subcutaneous metastases. Communication between thoracoepigastric veins and the axillary venous system has also been proposed as a potential pathway for metastatic spread.

Conclusion:

Subcutaneous metastasis from hepatocellular carcinoma is a rare manifestation of advanced disease. Clinicians and radiologists should be aware of this unusual presentation when evaluating a rapidly enlarging chest wall or soft-tissue mass. Prompt imaging, histopathological confirmation, and multidisciplinary management are essential for accurate diagnosis and appropriate treatment.

FIGURES :

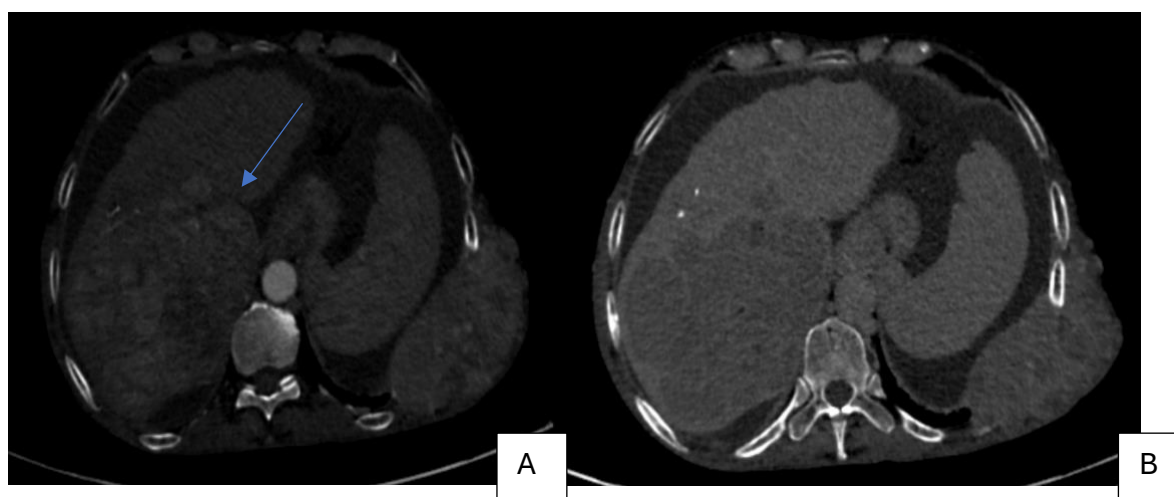


Figure 1. Contrast-enhanced abdominal CT. (A) Arterial-phase axial image demonstrates a large heterogeneous hypervascular hepatic mass measuring 135 mm, occupying almost the entire right hepatic lobe with focal extension into segment Iva (blue arrow) (B) Delayed-phase image shows contrast washout, a characteristic imaging feature of hepatocellular carcinoma.

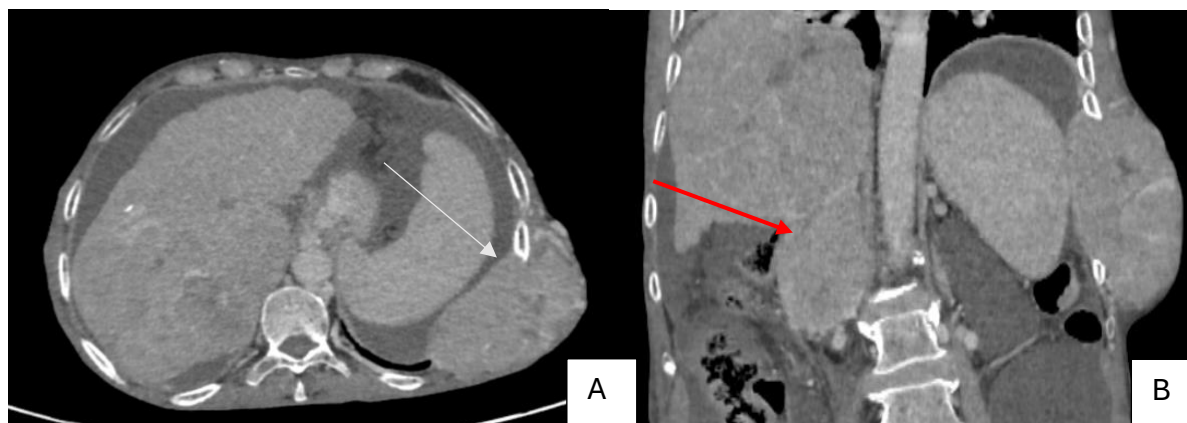


Figure 2. Portal venous phase contrast-enhanced CT. Axial (A) and coronal (B) images demonstrate a heterogeneously enhancing subcutaneous mass of the left thoracoabdominal wall with adjacent destruction of the left tenth rib (white arrow). A synchronous right adrenal metastatic lesion is also visible (red arrow)

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