CASE REPORT | LIVER

Solitary Extrahepatic Intramuscular Metastasis from Cryptogenic Hepatocellular Carcinoma

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ABSTRACT

Although hepatocellular carcinoma (HCC) recurrence after curative resection is not uncommon, it primarily recurs in the liver prior to metastatic progression. We report a case of resected pT2N0 cryptogenic HCC that recurred in the superior paracervical musculature without evident intrahepatic recurrence. The patient also developed cervical spine instability requiring urgent neurosurgery. Cryptogenic HCC is thought to arise from non-alcoholic fatty liver disease even without cirrhosis. Unfortunately, it also portends a worse prognosis compared to HCC of other etiologies. This highlights the aggressive behavior of cryptogenic HCC, which warrants further research as non-alcoholic fatty liver disease becomes increasingly common.

INTRODUCTION

It is not uncommon for hepatocellular carcinoma (HCC) to recur after curative resection. When it does recur, there is usually recurrence of the primary intrahepatic tumor. Any additional extrahepatic recurrences most often present in the lungs (39.5%) and lymph nodes (34.2%), with rare presentation in musculature.[1]

CASE REPORT

A 71-year-old man with a history of localized prostate cancer (cT1c, Gleason 3 + 3) and localized melanoma status post excision presented with right upper quadrant abdominal pain. A hepatic mass suspicious for HCC was found on imaging. He subsequently received a hepatic wedge resection with cholecystectomy and portocaval lymph node dissection. Pathologic staging was determined at pT2N0, and the 3.9-cm tumor was a well to moderately differentiated HCC with a 1.8-cm margin and evidence of microvascular invasion but no involvement of macroscopic portal or hepatic veins, gallbladder, or lymph nodes. As a result, the patient was staged at pT2N0. Of note, the non-neoplastic liver parenchyma was found to have moderate steatosis with grade 1 portal chronic inflammation and stage 1 portal fibrosis, thought to be a result of mass effect from the tumor. The patient had no evidence of iron overload on staining, did not drink alcohol regularly, and was serologically negative for hepatitis B, hepatitis C, Wilson's, α-1 antitrypsin deficiency, and autoimmune hepatitis.

One year after resection, the patient presented to the emergency department with 3 months of progressive left-sided neck pain after a car accident. On presentation, his labs showed α-fetoprotein of 139.8 μg/L (from 32.6 μg/L at 4 months prior) and a prostate-specific antigen of 11.51 ng/mL (from 8.86 ng/mL at 4 months prior). All other labs were within normal limits, including liver function tests. Of note, a recent triphasic computerized tomography (CT) abdomen done for routine biannual surveillance showed no HCC. Given the persistence of his symptoms, he underwent a neck CT in the emergency department, which showed a 5 × 4 × 4 cm heterogeneously enhancing mass centered in the left paraspinal musculature of the craniocervical junction. The mass encased the vertebral artery, internal jugular vein, and lateral process of the C1 vertebra, for which he eventually required neurosurgical

Figure 1. Mass encasing the vertebral artery, internal jugular vein, and lateral process of the C1 vertebra.

intervention due to atlantoaxial instability (Figure 1). A full-body positron emission tomography scan, ordered due to his history of multiple malignancies, revealed no additional hypermetabolic masses. Subsequent CT-guided biopsy of the neck mass showed poorly differentiated clusters of malignant cells with enlarged pleomorphic nuclei, irregular nuclear contours, and a moderate amount of granular-to-vacuolated cytoplasm. Immunohistochemistry showed that the cells were positive for HepPar-1 and focally positive for arginase-1, supporting a diagnosis of metastatic HCC.[2]

DISCUSSION

The recurrence rate of HCC after resection is estimated to be around 70% within 5 years of surgery. However, one series of 348 HCC resections showed that only 3.4% of patients had extrahepatic recurrence without intrahepatic lesions.[3] Furthermore, the site of our patient's metastasis was fairly rare, located in the high-risk musculature surrounding the superior cervical spine.[4] The hypothesized route for such paraspinal metastases is through Batson's plexus connecting the azygos vein, hemiazygos vein, and vertebral venous plexus. Although this patient initially had resectable disease, the presence of microvascular invasion on pathology from his hepatic wedge resection suggests a plausible mechanism for his subsequent solitary metastasis.

Furthermore, our patient had no clear etiology of HCC except for moderate non-alcoholic steatosis noted on biopsy, with only mild portal inflammation and fibrosis thought to be related to tumor mass effect. In fact, non-alcoholic fatty liver disease (including steatohepatitis) is thought to be the etiology of most cryptogenic HCC, even in the absence of significant fibrosis or cirrhosis.[5] One theory of interest hypothesizes that hepatocellular adenomas are the precursor lesion, particularly in patients with both fatty liver disease and metabolic syndrome.[6] Unfortunately, these patients also tend to present with larger tumors and more advanced stages of disease, and they have poorer overall survival.[7] Given the paucity of data, current guidelines for post-resection surveillance for HCC of any etiology recommend α-fetoprotein and cross-sectional abdominal imaging every 3–4 months for 3 years, and every 6 months thereafter.[8] Although our patient received appropriate surveillance imaging after resection, he clearly had a poor outcome with a fairly rapid progression from initial diagnosis of resectable HCC to aggressively metastatic disease within 1 year. With the growing prevalence of non-alcoholic fatty liver disease, this case report highlights the importance of further research into cryptogenic HCC.[9,10]

DISCLOSURES

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