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CASE REPORT | LIVER

Incidental Hepatocellular Carcinoma Bony Metastasis in a Patient Listed for Liver Transplant

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ABSTRACT

A 67-year-old man with a history of alcohol and hepatitis C-associated cirrhosis is diagnosed with incidental metastatic liver cancer during hospitalization for hepatic encephalopathy. He had 2 LI-RADS-3 (indeterminant) lesions on liver magnetic resonance imaging 3 months prior but had no history of hepatocellular carcinoma and was listed for liver transplant. During inpatient paracentesis, the ascites fluid was bloody, so the abdominal and pelvic computed tomography was performed showing a lytic lesion in the left posterior inferior pubic rami. Alpha fetoprotein was within normal limits. His liver was imaged on several occasions without definite evidence of malignancy. Bone biopsy revealed metastatic hepatocellular carcinoma. On return to baseline mental status, patient endorsed no bony pain.

Keywords: Hepatocellular Carcinoma, Liver Transplant, Cancer Screening

INTRODUCTION

Cirrhosis is a condition which greatly increases the risk of hepatocellular carcinoma (HCC).[1] In patients with cirrhosis who undergo evaluation for liver transplant, HCC screening is recommended every 6 months.[2] Liver transplant is contraindicated in patients with metastatic HCC as outlined in the Milan criteria.[2] This case discusses an incidental metastatic HCC, found in a patient on the liver transplant wait list by cross-sectional imaging performed for another reason.

CASE REPORT

A 67-year-old man with a history of cirrhosis secondary to alcohol use and hepatitis C infection with recent completion of antiviral treatment presented to the emergency department with altered mental status. The patient's spouse reported 3 days of generalized abdominal pain and progressive confusion. She reported that the patient had missed several doses of home lactulose. She also noted jaundice which was similar to his baseline but did not notice hematemesis, melena, hematochezia, fevers, or bone pain; the review of systems was otherwise negative. On review of clinic visits, he had lost about 35 pounds over the last 3 months believed to be from loss of appetite. He was recently listed for liver transplant after thorough multidisciplinary evaluation. He was diagnosed with hepatitis C on routine screening 1 year prior, underwent 6 months of antiviral therapy, and subsequently achieved sustained virologic response.

On presentation, his vital signs were within normal limits and he was sleepy but arousable and not answering questions, consistent with stage 3 hepatic encephalopathy. His abdomen was soft, distended, with diffuse tenderness on palpation and bilateral flank tenderness. His serum laboratory results were notable for a platelet count of 42 k/μL, sodium of 125 mEq/L, creatinine of 1.3 mg/dL, albumin of 2.9 g/dL, total bilirubin of 5.1 mg/dL, and international normalized ratio of 1.4, with a model for end-stage liver disease-Na score of 27, compared with a score of 28 when listed for transplant 1 month prior. Computed tomography (CT) head was unremarkable. Abdominal ultrasound revealed large volume ascites. Diagnostic paracentesis found serosanguinous colored fluid with fewer than 250 neutrophils/mL in the ascites, and peritoneal fluid culture was negative, making spontaneous bacterial peritonitis unlikely. He was continued on home lactulose and rifaximin.

On day 3 of admission, he noted continuing abdominal fullness and discomfort because his mental status improved. Therapeutic paracentesis was performed with grossly bloody ascites that did not improve with increasing volume removal. The abdomenial and

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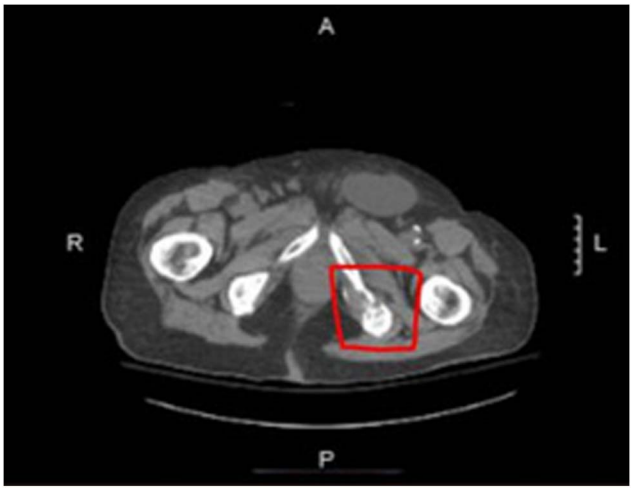

Figure 1. Left posterior inferior pubic rami lytic lesion—CT.

pelvic CT was obtained to look for a bleeding source. No bleeding was identified, but an incidental 1.8 × 2.3 cm lytic lesion was noted on the left posterior inferior pubic rami concerning for metastatic lesion (Figure 1). Alpha-fetoprotein (AFP) was 11 from 8 ng/mL compared with both 3 and 7 months prior. On day 4 of admission, this lesion was biopsied, with pathology consistent with metastatic HCC. The abdominal magnetic resonance imaging (MRI) liver protocol revealed 2 LI-RADS-3 (LR3) lesions (indeterminant for malignancy) in segments 8 and 4a of the liver (Figures 2 and 3, respectively). These were first seen on a surveillance MRI performed 3 months prior; at this time, they were also classified as LR3; the segment 8 lesion was originally 1 cm and did not change size and the segment 4a lesion went from 1.0 to 1.3 cm. At the time of transplant listing, he had been permitted to remain on the transplant list as long as he underwent surveillance MRI in 6 months, which is the standard management for LR3 lesions.[3] Given this new

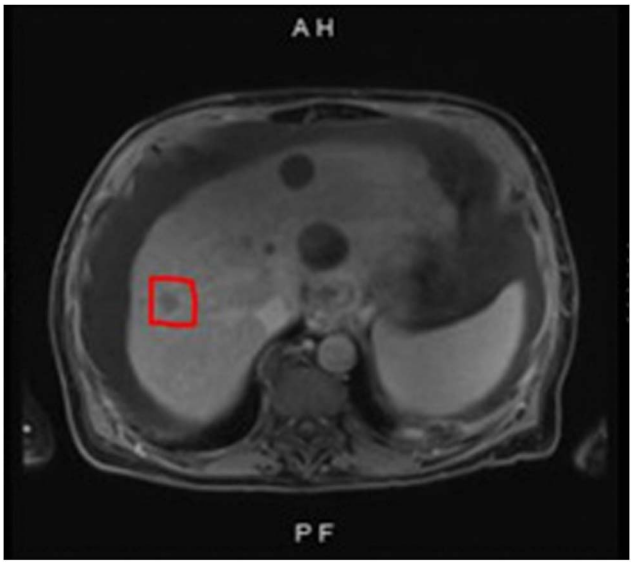

Figure 2. 2 LIRADS-3 (LR3) hepatic lesion in segment 8—MRI.

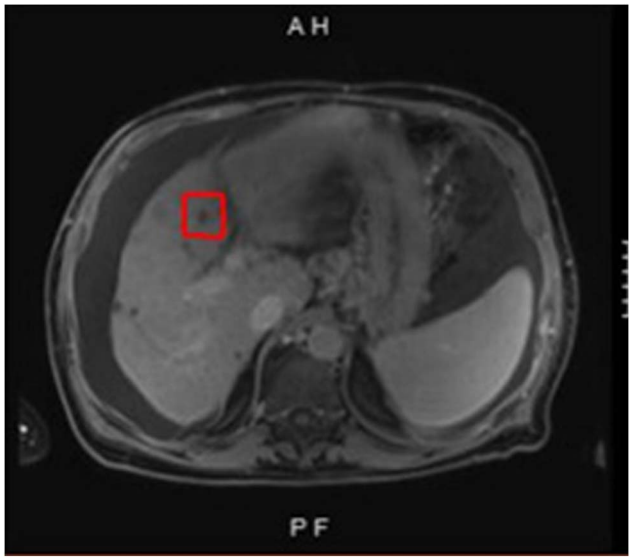

Figure 3. 2 LIRADS-3 (LR3) hepatic lesion in segment 4a—MRI.

diagnosis of metastatic HCC, he was removed from the liver transplant waitlist and discharged with the oncology follow-up. Hospice was subsequently initiated.

DISCUSSION

This patient had a painless bony metastasis of HCC that was not detected by symptoms or standard screening protocols. There do not seem to be studies on prevalence of this occurrence in the literature, prompting interest in reporting this case. Although there was some change, his LR-3 liver lesions were largely similar over the 3-month interval between abdominal MRIs. Had it not been for the CT scan obtained for other clinical purposes, his metastatic HCC might have gone undiagnosed. Although 8% of explanted livers contain HCC, the incidence of metastatic HCC in liver transplant recipients is not well known likely because metastatic cancer precludes transplant candidacy.[2,4] HCC screening with or without AFP and abdominal imaging are standard cirrhosis care and essential components of liver transplant evaluation.[2] One meta-analysis found ultrasound with AFP increased sensitivity by about 20% while decreasing specificity by about 10%.[5] In addition, some literature has suggested that metastatic spread is found in 10%–15% of patients at initial diagnosis of HCC, highlighting the importance of cancer screening to ensure proper selection of transplant candidates.[6] In this patient's case, although his hepatitis C was treated, theoretically lowering his risk of HCC by as much as 75%, he was still able to develop HCC.[7]

His hepatic lesions were graded as LR-3; while considered indeterminant, they are in fact malignant about 30% of the time.[3] Therefore, in select patients, such as those being considered for liver transplant with known LR-3 liver lesions, it may be prudent to include a broader screening modality for metastatic HCC. For example, the chest, abdominal, and pelvic

CT in select patients can identify occult bony, lymphatic, or lung lesions which are common sites for metastasis.[8] This approach could prove useful in patients with LR3 lesions where liver biopsy is less often pursued, especially when the lesions are less than 2 cm, but the clinical suspicion for occult malignancy remains high.[3] Particularly, practitioners may have a higher suspicion for metastatic disease if a patient with LR3 lesions has findings such as weight loss, new bony pain, or increased inflammatory markers on laboratory results. In this case, although the patient had no bony pain, he had profound weight loss, increasing suspicion for cancer. If a potential metastatic lesion is identified, a more convenient biopsy target than the liver, like the bone in this case, may also be pursued. In summary, select patients being considered for liver transplant may require a more intensive workup for occult metastatic disease.

DISCLOSURES

Author contributions: JW Levine: cared for patient as part of primary team in hospital; authored manuscript, critical manuscript edits; and is the article guarantor. H. Fadi and P. Bloom: cared for patient on the consultant team; reviewed manuscript, and edited where appropriate, available for consultation.

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Informed consent was not obtained for this case report.

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