Clinical Case Report

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Seminal vesicle metastasis after liver transplantation for hepatocellular carcinoma

A case report

Yonghua Shen, MD[a], Ling Nie, MD[b], Yuling Yao, MD[a], LiQing Yuan, MD[a], Zhenqing Liu, MD[c], Ying Lv, MD[a,*]

Abstract

Rationale: Cancer recurrence and metastasis after liver transplantation (LT) is common in some hepatocellular carcinoma (HCC) patients. The most common sites of extrahepatic metastases are lung, regional lymph node, adrenal gland, and bone. To our knowledge, HCC metastasis to the seminal vesicle after LT has not been reported in the literature.

Patient concerns: A 56-year-old Asian man presented at hospital with a 9-year history of orthotopic LT because of HCC. The patient underwent surgery and radiotherapy for HCC metastasis to adrenal gland and 1 year later, chemotherapy for peritoneal metastasis. A few months later, the patient presented with computed tomography (CT) image showing masses in right lobe of liver, seminal vesicle, and space occupying mass between the spleen and stomach.

Diagnoses: Combination of clinical and pathological features revealed the seminal vesicle mass as metastasis from HCC.

Interventions: Endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) for liver and seminal vesicle lesions was performed and the postoperative pathology revealed malignancy. Thus, the patient underwent surgery and the diagnosis of seminal vesicle metastasis of HCC was confirmed by pathology and immunohistochemical analysis.

Outcomes: The patient died due to systemic failure.

Lessons: Seminal vesicle metastasis from HCC after LT is rare and there is no consensus on its treatment. Further research into the pathogenesis and therapy of seminal vesicle from HCC after LT is needed to improve outcomes in the rare disease.

Abbreviations: EUS-FNA = endoscopic ultrasound-guided fine-needle aspiration, HCC = hepatocellular carcinoma, LT = liver transplantation.

Keywords: hepatocellular carcinoma, liver transplantation, metastasis, seminal vesicle

1. Introduction

Globally, hepatocellular carcinoma (HCC) is the 6th most prevalent cancer and the 3rd most prevalent reason for cancer-related deaths.[1] Liver transplantation (LT) is one of the curative treatments for HCC. However, in spite of the introduction of Milan criteria, cancer recurrence and metastasis after LT is common in some HCC patients.[2] The most common sites of extrahepatic metastases are lung, regional lymph node, adrenal gland, and bone.[3] Seminal vesicle metastasis from HCC is extremely rare, and it has not been reported in literature that HCC metastasize to the seminal vesicle after LT as far as know. Given the relative paucity of information, an improved description of the disease process and diagnosis is essential. So we present here a HCC case with an unusual site of tumor recurrence after LT that should be known as a potential site of metastasis.

2. Case report

A 56-year-old Asian man presented at hospital with a 9-year history of orthotopic LT because of HCC. We have got the informed consent for publication of the case. Since then, the patient has consistently taken tacrolimus orally and accepted disciplinary examination. In July 2013, the level of serum alpha-fetoprotein was elevated to 504.8 ng/mL (normal level < 10 ng/mL), and positron-emission tomography (PET) and computed tomography (CT) showed right adrenal gland nodule. Then the patient underwent exploratory laparotomy and resection of the retroperitoneal metastasis on 22 August 2013. Postoperative pathology revealed that HCC metastasized to adrenal gland. Thus, regular postoperative tumour bed radiotherapy was performed from 14 October 2013. In February 2014, the patient placed biliary plastic stents because of obstructive jaundice derived from biliary anastomotic stoma stricture. After therapy, the serum level of bilirubin gradually recovered. In August 2014, the CT and magnetic resonance images (MRI) showed space occupying lesion in right lobe of liver which was about 31×32 mm in size. Soon afterwards the patient was performed

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[a] Department of Gastroenterology, The Affiliated Drum Tower Hospital of Nanjing University, Medical School, [b] Department of Pathology, The Affiliated Drum Tower Hospital of Nanjing University, Medical School, Nanjing, China, [c] Division of Oral Biology and Medicine, School of Dentistry, UCLA, 10833 Le Conte Ave, Los Angeles, USA.

[*] Correspondence: Ying Lv, Department of Gastroenterology, The Affiliated Drum Tower Hospital of Nanjing University, Medical School, Nanjing 210008, Jiangsu Province, China (e-mail: 13605156761@163.com).

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Figure 1. Computed tomography (CT) image revealed right lobe of liver, seminal vesicle, and space between the spleen and stomach masses. (A) and (B), right lobe of liver mass (short white arrow) and space between the spleen and stomach mass (short black arrow) at baseline examination and portal phase of CT image; (C) and (D), left seminal vesicle (long black arrow) at baseline examination and portal phase of CT image. CT = computed tomography.

with occupied area resection of abdominal cavity on 20 October 2014. During operation, the surgeons discovered serious adhesion and resected perihepatic mass, mesenteric mass, and intestinal wall mass. Postoperative pathology still showed HCC metastases. And then abdominal cavity perfusion chemotherapy with pemetrexed was performed from 28 November 2014. The therapy discontinued because of 3rd-degree myelosuppression, which improved after conservative treatment. On 20 March 2015, the CT image showed masses in right lobe of liver, seminal vesicle and space occupying mass between the spleen and stomach (Fig. 1). In order to receive further treatment, he came to our hospital again in May 2015. We performed endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) for liver and seminal vesicle lesions (Fig. 2) and postoperative pathology revealed malignancy. Thus, the patient underwent surgery and the diagnosis of seminal vesicle metastasis of HCC was confirmed by pathology and immunohistochemical analysis (Fig. 3). Unfortunately, the patient died due to systemic failure in August 2016.

Histologic examination of the resected surgical specimen in the seminal vesicle showed the tumor cells arranged in trabecular and solid compatible with the original HCC. Immunohistochemical staining revealed tumour cells to be tested "strongly positive" for GPC3 and HepPar1, but negative for AFP, CK19, CK7, PSA, CA125, and CEA. Mitotic figures were easily observed (Ki-67 immunoproliferative index of approximately 30%).

3. Discussion

In the present case, the patient had a long history of LT because of HCC. In patients for LT due to HCC, the most frequent site of metastasis is the transplanted liver. This patient had metastases that occurred in liver, adrenal gland, intestinal wall, and seminal vesicle. Furthermore, extrahepatic metastases especially after LT are more aggressive compared to those occurring in patients without LT.[4,5] Adrenalectomy is a safe procedure and leads to acceptable survival rates even after LT.[6] However, metastasis from HCC to the seminal vesicle has only been reported once but only in a patient with HCC that did not receive LT.[7]

In this case, the pathologic diagnosis of seminal vesicle metastasis was established by EUS-FNA before the surgery. The EUS-FNA increases the diagnostic accuracy by providing histology and can also distinguish malignant diseases from space-occupying tumours thereby guiding treatment. Also because the risks associated with procedure are very low, the application of EUS-FNA will be more widely.[8]

The histopathological characteristics of the mass from seminal vesicle were similar to that of primary HCC, which was diagnosed relying on the microscope performance of large and polygonal cells, trabecular pattern and endothelial cuffing. Moreover, the tumor cells were positive for GPC3 and HepPar1 immunohistochemically, which have been reported as serum and histochemical markers for HCC.[9,10] In the present case, the patient had a long history of HCC. Moreover, the pathological

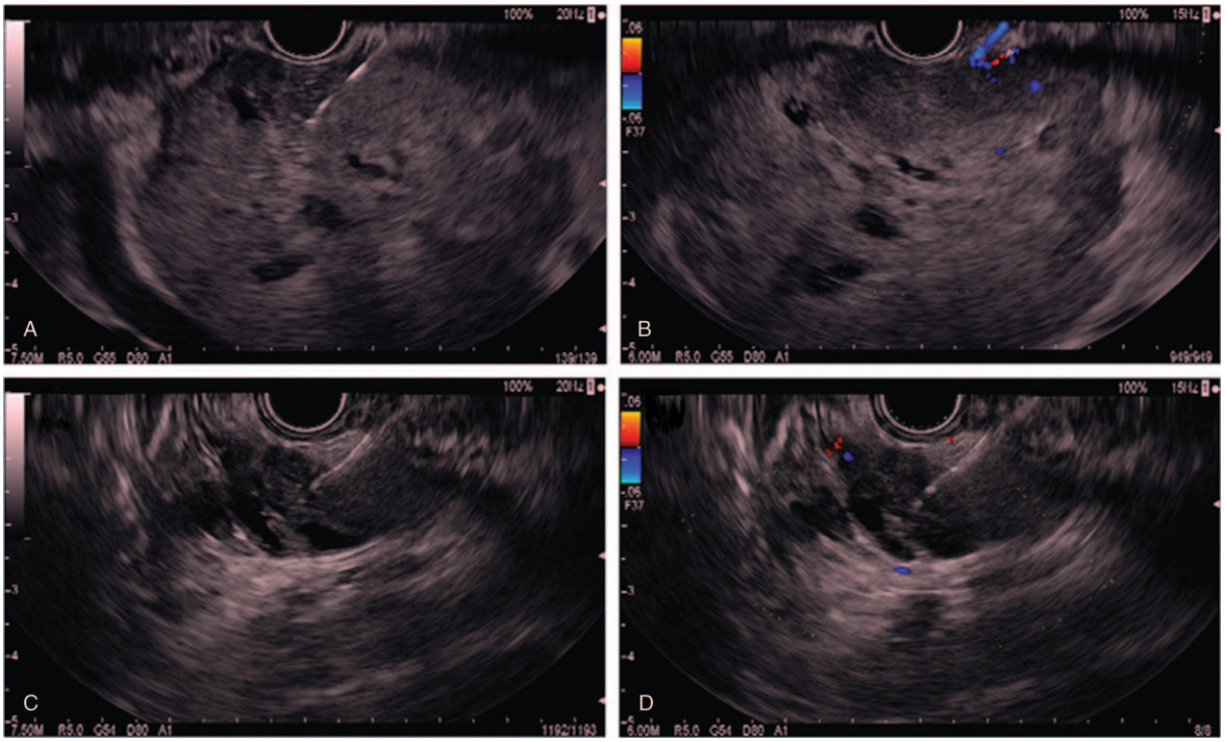

Figure 2. Endoscopic ultrasound-guided-fine-needle aspiration (EUS-FNA) image showed masses in liver and seminal vesicle. (A) and (B), porta hepatis image with EUS-FNA; (C) and (D), seminal vesicle image with EUS-FNA. EUS-FNA = endoscopic ultrasound-guided-fine-needle aspiration.

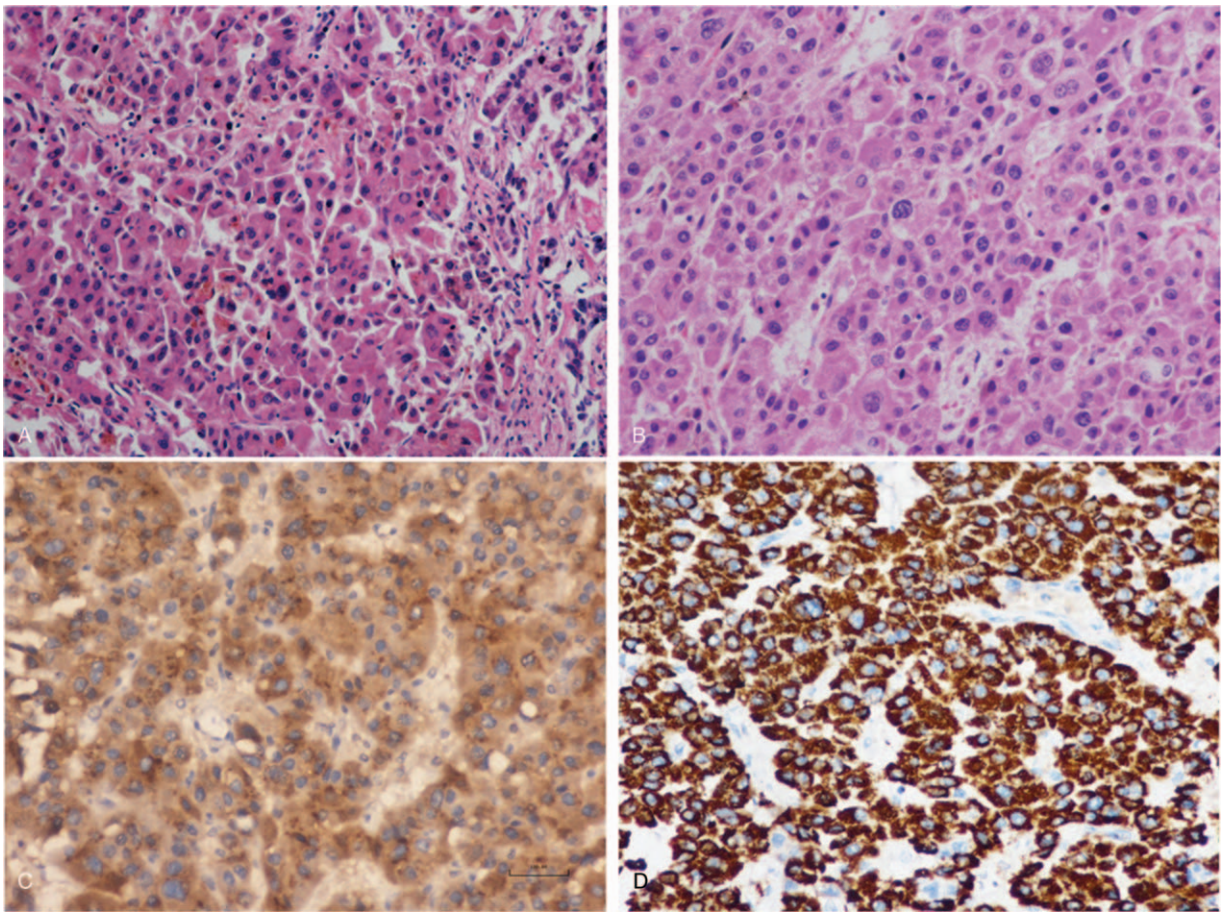

Figure 3. The pathology and immunohistochemical analysis with seminal vesicle mass. (A) and (B), a microscopic view of the tumor in the seminal vesicle; (C), the tumor cells from the seminal vesicle were positive for GPC3; (D), the tumor cells from the seminal vesicle were positive for HEPT1.

characteristics of the mass from seminal vesicle were similar to that of primary HCC. Combination of clinical and pathological features revealed the seminal vesicle mass as metastasis from HCC, different from primary tumour.[11]

Seminal vesicle metastasis from liver for HCC is extremely rare and relevant data is quite limited.[7] Tentative metastasis resection, radiotherapy and chemotherapy could be selected because of limited treatment experience. However, the clinical prognosis would be predictably poor in accordance with the patient. In summary, seminal vesicle metastasis from HCC after LT should be considered when the follow-up and pathological features described above are observed.

4. Conclusion

The seminal vesicle metastasis after LT for HCC is rare based on present data. Imaging examination can discover lesions in seminal vesicle. Pathology confirmation is challenging, thus leading to a further delay in diagnosis. The EUS-FNA can be used as identification of benign as well as malignant tumour of seminal vesicle. Histopathological and immunohistochemical characteristics of the resected surgical specimen can be used for further confirmation. There is no consensus on appropriate treatment up to now. Further research into the pathogenesis and therapy of seminal vesicle from HCC after LT is needed to improve outcomes in the rare disease.

Author contributions

Conceptualization: Yonghua Shen, LiQing Yuan, Ying Lv.
Data curation: Ling Nie.
Formal analysis: Yonghua Shen, Yuling Yao.
Investigation: Zhenqing Liu.
Methodology: Ling Nie, Zhenqing Liu.
Project administration: Ling Nie, LiQing Yuan.
Supervision: Yuling Yao, LiQing Yuan, Ying Lv.
Validation: Zhenqing Liu.
Visualization: Yuling Yao.
Writing – original draft: Yonghua Shen.
Writing – review & editing: Ying Lv.

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