Case Report

An Unusual Presentation of HCC in a Patient with No Underlying Liver Disease: A Case Study

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Abstract
Pedunculated hepatocellular carcinoma (P-HCC) is a rare subtype of HCC. P-HCC may occur in patients without underlying liver cirrhosis and can be present with negative serum tumor markers. With a growing worldwide incidence of nonalcoholic fatty liver disease, non-cirrhotic HCC will likely become more prevalent. We report a patient presenting to the hospital with nonspecific symptoms of weight loss, abdominal discomfort, and early satiety. Abdomen palpation found a large firm mass in the right middle abdomen. Computed tomography imaging showed a large right abdominal mass without evidence of liver attachment. The patient underwent a diagnostic laparotomy where a single 17 cm exophytic mass originating from the left liver lobe was found and resected. Clear margins were attained, and pathology demonstrated HCC. Early diagnosis of HCC is critical to achieving curative treatment, and physicians should keep P-HCC in mind when presented with a similar patient.
Introduction

Hepatocellular carcinoma (HCC) is a primary liver malignancy and has been identified as one of the most common cancer types throughout sub-Saharan Africa and Southeast Asia [1]. Primary liver cancer is a common cause of cancer-related deaths worldwide [1]. Since 1980, its incidence has more than tripled, and the death rates have more than doubled in the USA alone. HCC is expected to cause approximately 800,000 new cases and over 700,000 deaths this year [1].

HCC is a very aggressive tumor, with metastasis common in early disease. Pedunculated-HCC (P-HCC) is a sporadic form of HCC that can present as a large liver mass extending throughout the abdomen [2]. Intra-abdominal tumors easily mimic P-HCC, and the nonspecific symptoms of P-HCC make forming a differential diagnosis difficult [3]. This can lead to delays in treatment and ultimately poorer prognoses.

HCC is usually present in the setting of chronic liver inflammation and cirrhosis. Patients commonly have risk factors including viral hepatitis B or C, alcohol abuse, and nonalcoholic fatty liver disease [4]. It is uncommon to see HCC in patients without prior chronic liver disease.

Despite the evolution and emergence of new therapeutic options, patients with advanced HCC have poor overall survival. Therefore, the discovery of predictive biomarkers (that can guide disease monitoring and therapeutic decision-making in HCC patients receiving immunotherapy) is critical for advancing pharmacological treatment effectiveness [5–7].

Here, we present a patient diagnosed with P-HCC following a diagnostic laparotomy for an unknown abdominal mass. Unfortunately, the patient did not have any unique laboratory or radiographic findings that were suspicious for HCC, making the diagnosis quite challenging. However, since a patient’s prognosis is highly dependent on early disease detection, physicians should be aware of this rare presentation for quick diagnosis and treatment.

Case Report/Case Presentation

In September 2019, a 66-year-old Ethiopian male presented with a 2-month history of weight loss, abdominal discomfort, and early satiety. No nausea or vomiting was reported, and there was no evidence of chronic liver disease. The past medical history was significant for medication-controlled hypertension and diabetes. He has no record of hepatitis, alcohol abuse, tobacco use, blood transfusions, or prior surgeries. The family history was negative for any malignancy. A large right upper quadrant mass extending to the lower abdomen was palpated on the physical exam. The abdomen was non-tender and non-distended. No jaundice was seen. All other physical exam findings were noncontributory. Laboratory examination revealed mild anemia with a hemoglobin of 12.6 g/dL, hematocrit of 39%, normal white blood cell count of 6,470/µL, and platelet count of 260,000/µL. Other laboratory findings included normal total serum bilirubin of 0.6 mg/dL and alanine transaminase of 19 U/L with elevated aspartate transaminase (68 U/L), GGT (402 U/L) and alkaline phosphatase (186 U/L). Albumin and INR were both normal at 4.1 g/dL and 1.2, respectively. Serum tumor markers were within their normal limits, including alpha-fetoprotein (AFP), cancer antigen CA19-9 and carcinoembryonic antigen (CEA). The patient’s Child-Pugh score was A. Ultrasound showed a heterogeneous mass in the upper abdomen prompting further investigation. Contrast-enhanced abdominal computed tomography showed an enlarged liver with multiple enhancing multilocular, homogeneous lesions with substantial hypervascularity. The macroscopic fatty component measured
11 cm in diameter (13.2 cm × 10.7 cm × 23.2 cm, width, depth, and height, respectively). The lesion compressed but did not involve intrahepatic structures, the stomach, pancreas, and the superior mesenteric vein (shown in Fig. 1).

At this time, the differential diagnosis included a hepatic adenoma with malignant transformation to HCC, angiomylipoma, and both primary and secondary liposarcomas. Infectious causes of liver masses, including parasitic disease, were considered; however, the prolonged course and lack of fever or abnormal blood cell counts made this diagnosis less likely. This case was discussed at an interdisciplinary institutional tumor board, and the decision to proceed with a diagnostic laparoscopy was made.

Surgery showed a single, large, and heavy exophytic mass extending from the left lobe of the liver, measuring 17 cm in diameter (shown in Fig. 2a–b). After conversion to open surgery, a liver left lateral bi-segmentectomy (2–3) was performed. A Jackson-Pratt (JP) drain was also placed at that time. The specimen pathology reported a 3 kg tumor, with

**Fig. 1.** Contrast-enhanced CT identifying a large, multilocular mass in the left lobe of the liver. CT, computed tomography.

**Fig. 2.** a A large unknown mass originating from the left lobe of the liver identified in the abdomen and pelvis during surgery. b A large 3 kg hepatic mass excised during surgery.
The histology of hepatocellular carcinoma, extensive clear cell, and fatty changes. The tumor stained positive for HEPAR and arginase and was negative for glypican 3 (shown in Fig. 3a–d). Negative surgical margins were confirmed (R0). The postoperative period was uneventful, with the Jackson-Pratt drain collecting nonhemorrhagic fluid without bile. The patient was then discharged home on postoperative day 7.

He returned to the clinic for a 14-day follow-up visit without complaints. His surgical scar was healing well without drainage or signs of infection. He is followed at the oncology clinic without any adjuvant treatment and is currently 34 months (July 2022) following resection. He reports no new symptoms, and his serum tumor markers remain within the normal range.

**Discussion/Conclusion**

Hepatocellular carcinoma is an aggressive primary liver tumor that commonly metastasizes [8]. They are more commonly found in Southeast Asia and Sub-Saharan Africa; their global incidence is steadily rising, and they are now the fourth most common cause of cancer-related deaths worldwide [9]. P-HCC is an infrequent exophytic presentation of HCC with a reported incidence of between 0.2–3.0% in Japan [10].

Diagnosing and surgically resecting P-HCC is essential to remove the HCC tumor and help decrease the likelihood of metastasis. Unfortunately, P-HCC may be difficult to diagnose preoperatively, as was the case here. Nonspecific symptoms of weight loss, abdominal discomfort, and early satiety need to be led to medical attention and a thorough physical abdomen examination. Then imaging with ultrasonography and computed tomography scan helps identify a mass with or without an appendage to the liver. However, the tumor’s origin
is not always easily discernable. The tumor’s variable location and adherence to its surrounding organs have led to preoperative misdiagnoses of P-HCC as adrenal tumors, mesenteric tumors, myoma uteri, and splenic or peritoneal masses [11–13].

Another challenge to diagnosing P-HCC before surgery is a lack of specific lab and serum tumor markers. AFP is known to be elevated in HCC; however, this is not always the case, and unfortunately, it is much less common in P-HCC. HCC is commonly associated with liver tissue impairment such as viral hepatitis, metabolic syndromes, alcohol use, and nonalcoholic fatty liver disease, all of which cause a chronic inflammatory state. Cirrhosis then follows, which may ultimately lead to HCC (4). This pathophysiology, however, is not always the case in P-HCC. Similar to the case presented here, a handful of other reports have described no underlying hepatic disease in patients presenting with P-HCC [11]. Again, this demonstrates the challenge in diagnosis.

Early resection of P-HCC is critical to achieving a good prognosis. Due to the usually large size of these tumors, they are typically amenable to resection if done early. These challenges in presurgical diagnosis can impact the ability for curative resection, which is considered first-line if R0 resection is attainable. Since R0 resection was possible, and our patient had normal liver function tests, surgical resection was a feasible option.

Another factor to take into consideration with P-HCC is the possibility of recurrence. HCC tumors that are ≥10 cm in diameter show an increased rate of recurrence and a shorter overall survival following curative resection. A study of 574 patients that underwent curative resection showed that tumors ≥10 cm are an independent risk factor for extra-hepatic recurrence, with the 5-year overall survival in these patients being 42.9%, compared to 71.3% with smaller HCC sizes. The patient presented here had a tumor measuring 17 cm in diameter. Although he is only 34 months following resection, there are no signs of recurrence.

**Conclusion**

Here we described a 66-year-old male presenting with a large, peduncular hepatocellular carcinoma extending from the left lobe of the liver without any distant lesions. In addition, this patient had no signs of history of chronic liver disease nor any elevation in serum tumor markers. Due to the unusual presentation, a diagnostic laparotomy was performed, and the tumor was resected, achieving negative margins. At 34 months post-surgery, the patient feels well without any recurrence.

**Statement of Ethics**

Ethical approval is not required for this study in accordance with local or national guidelines. Written informed consent was obtained from the patient for the publication of this case report and any accompanying images.

**Conflict of Interest Statement**

The authors have no conflicts of interest to declare.

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Author Contributions

Anton Osyntsov and Melanie Zemel have contributed equally to this work and share the first authorship. Waleed Kian, Shadi Abu-Swis, Anton Osyntsov, Nir Cohen, and Gilbert Sebbag analyzed and interpreted the patient data. Nir Cohen, Ranin Marei, Muhammad Krenawi, Melanie Zemel, Walid Shalata, Bilal Krayim, Jonah M. Cooper, Waleed Kian, and Shadi Abu-Swis contributed significantly to writing the manuscript.

Data Availability Statement

All data generated or analyzed during this study is included in this article. Further inquiries can be directed to the corresponding author.

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