Journal of Case Reports in Medicine

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Case Report ISSN: 2090-5351

Left adrenal hepatocellular carcinoma recurrence in liver transplanted patient

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Abstract

Hepatocellular carcinoma (HCC) recurrence after liver transplantation (LT) has been reported in less than 20% of patients fulfilling Milan Criteria. Mostly, it occurs on the liver, lungs, lymph nodes, bones and brain. A 45 years old Caucasian man affected by HCV-related liver cirrhosis with HCC, who underwent several multi-modal treatments, including hepatic resection, liver transplantation and loco regional treatment presented in our Department with an unusual mass within the left adrenal gland. patient underwent left adrenelectomy and the final histological findings showed feautures of HCC

This case shows that extremely rare sites of HCC metastases have to be always investigated, especially if, despite all carry out treatments, still persist a clinical or laboratory suspect of HCC recurrence.

Abbreviations: HCC: Hepatocellular Carcinoma; LT: Liver Transplantation; TACE: Trans-Arterial Chemo Embolization: AFP: Alpha-fetoprotein; mRECIST: Modified Response Evaluation Criteria in Solid Tumors: RVT: Remnant Vital Tissue; DAAs: Directly Acting Antivirals; HAS: Hepatocyte Specific Antigen

Introduction

Hepatocellular carcinoma represents about 90% of primary liver cancers and constitutes a major global health problem. Based on the stage of the disease, liver transplantation is a feasible option for early stages, treating, if present, also the underlying liver cirrhosis. However, high mortality rates were associated with HCC recurrence after liver transplantation. The key to management of this disease is early diagnosis to prevent further progression. Herein, we present a case of a rare site of extra hepatic HCC recurrence.

Case Report

A 45 years old Caucasian man, affected by HCV-related cirrhosis, presented to our Liver Unit in 2010 with a diagnosis of HCC on segment II of tthe liver. After discussion of the case in multidisciplinary meeting,

he underwent wedge open surgical resection; the histological report revealed a 17 mm solid/trabecular well-differentiated HCC. After 5 years, he received Sofosbuvir obtaining sustained viral response (SVR) at 12 weeks; however, within one month he developed a 12 mm and 20 mm HCC nodule on segment 3 and segment 8, respectively. His plasmatic level of alpha-fetoprotein (AFP) reached 170 UI/mL. Therefore, the patient underwent upfront trans-arterial chemioembolization (TACE) and, after one month, underwent liver transplantation. Pathology of the explanted liver found a Milan-IN poorly differentiated (G3) HCC with remnant vital tissue (RVT) > 2 cm in both nodules. Post-operative course was uneventful and immunosuppression treatment was everolimus-based. After one year of follow up, AFP raised to 145 UI/mL and a CT-scan showed multifocal hepatic HCC recurrence. Considering multifocal spread, the patient underwent TACE and started Sorafenib 400 mg bid obtaining mRECIST complete response. After one year, AFP level raised again to 144.5 UI/mL and a new CT scan found a 32 x 38 mm left adrenal mass that was considered for mini-invasive approach. Despite the previous surgeries, we performed laparoscopic left adrenalectomy with no major issues. Histopathology revealed a 36 mm G3 HCC inside the left adrenal gland (Figure 1). Post-operative course was uneventful and AFP fell to 45 UI/mL. After 6 months, patient is out of disease and in good clinical status.

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Keywords: Liver Transplantation; Adrenal metastases after liver transplantation; Hepatocellular carcinoma recurrence

Received: February 27, 2019; Accepted: March 15, 2019; Published: March 18, 2019

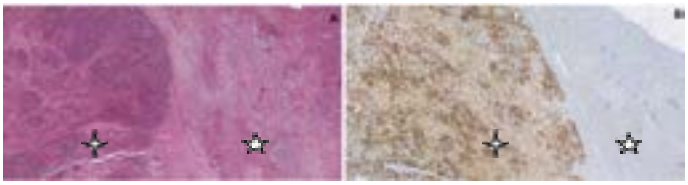

Figure 1: (A) H&E stain - Hepatocellular carcinoma findings (✦); adrenal gland (☆). (B) Immunohistochemical stain with HAS; Hepatocellular Carcinoma (✦); adrenal gland (☆).

Discussion and Conclusion

Left adrenal HCC metastases after LT are extremely rare [1,2] and reported mainly in UCSF and Milan-OUT LT recipients [3,4] (Table 1). To our knowledge, this is the first case reported of adrenal HCC metastasis that occurred after 2 years on the left adrenal gland in a Milan-IN patient at transplant. Interestingly, we observed a worsening of tumor histological pattern from 2010 (well-differentiated HCC) to 2018 (poorly differetiated HCC tumor on the left adrenal gland). We are strongly convinced that a RVT>2, as previously described [5], oblige a careful monitoring after LT with CT-scan in order to detect early HCC recurrence. Furthermore, the left adrenal tumor occurred despite multimodal treatments (hepatic resection, liver transplant, TACE and oral chemotherapy) in a Milan-IN patient. The present report confirms that the adrenal gland could be a potential site of metachronous HCC recurrence and it should be always investigated in patient with a long history of HCC. Besides, it underlines the importance of a multimodal treatment which, in this case, played an important role for the successful disease control, showing the importance of necrosis rate of the tumor burden on explant pathology in order to early predict HCC recurrence [5].

Disclaimer

The authors obtained the informed consent by the patient.

Conflict of Interest

The authors declare that they have no conflict of interests.

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Table 1

Left adrenal HCC metastasis after liver transplantation.

Author	N° of pts	Months after LT	Size in mm	LRT before LT	Intrahepatic recurrence after LT	Medical therapy after recurrence	Milan or UCSF criteria	Surgical treatment
Ha TY et al [1]	7 total 3 on left adrenal gland	21-58	15 - 66	NA	1 patient treated with TACE	NA	3/7 (42.9%) outside criteria	6 laparotomy 1 laparoscopy
Castroagudín JF et al [2]	1	5	44	NA	No	NA	NA	Extraperitoneal adrenalectomy
Chen SW et al [3]	1	33	35	NA	No	Gemcitabine + 5-fluorouracil	Outside criteria	Laparoscopy
Choi SB et al [4]	1	11	35	TACE	No	Adriamycin	Outside criteria	NA

NA: not available; TACE: Trans-Arterial Chemo Embolization; LT: liver transplant; LRT: loco regional treatment; HCC: hepatocellular carcinoma

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