Resection of Solitary Metachronous Lymph Node Metastasis from Hepatocellular Carcinoma Following Transarterial Chemotherapy with Cisplatin: A Case Report

TOMOHARU KUROKAWA, SHINTARO YAMAZAKI, MASAMICHI MORIGUCHI, MASARU AOKI, YOSHIUMI WATANABE, TOKIO HIGAKI and TADATOSHI TAKAYAMA

Department of Digestive Surgery, Nihon University School of Medicine, Itabashi-ku, Tokyo, Japan

Abstract. A 74-year-old female was found to have a 40-mm liver tumor (in segment VIII) by ultrasonography and was diagnosed with hepatocellular carcinoma (HCC). She underwent liver resection and was stably treated without recurrence for 19 months. A 45-mm extrahepatic tumor was then found during follow-up with enhanced computed tomography and was diagnosed as being a metachronous lymph node (LN) metastasis. Angiography revealed that the metastasis LN was fed by both the right and left gastric arteries. Transarterial chemotherapy with cisplatin was scheduled to control LN metastasis and to prevent intrahepatic metastasis, simultaneously. Blood alteration using coil embolization was performed to isolate the feeding arteries before transarterial chemotherapy with cisplatin powder. The patient was stably treated for 6 months (3 times) and no new intra- or extrahepatic metastatic lesions appeared during the chemotherapy. The patient subsequently underwent systematic LN dissection of the porta hepatis. She was successfully treated, and has remained recurrence-free for almost 5 years.

Synchronous lymph node (LN) metastasis of hepatocellular carcinoma (HCC) is a definitive poor prognostic factor and a contraindication for surgical treatment (1, 2). Metachronous LN metastasis is generally found in end-stage disease with multiple intra- and/or extrahepatic metastases. The reported one-year survival rate of patients with LN metastasis is around 50%; therefore, surgical treatment is rarely performed for metachronous LN (1). Few reports are available on patients with metachronous LN metastases who were successfully treated by surgical resection, among whom the indication for metastasis dissection was limited (3).

We experienced a case of solitary metachronous LN metastasis and reconsidered surgical treatment because the lesion was stably controlled by repeat transarterial chemotherapy followed by blood alteration for 6 months. Reconsidering surgical indications of such patients may contribute to a more favorable prognosis.

Case Report

A 74-year-old female was admitted to our department for treatment of a 40-mm HCC in segment VIII of the liver. She had no medical history of hepatitis viral infection or alcohol abuse. The laboratory results, including serum liver enzyme, bilirubin, albumin, prothrombin and α-fetoprotein level were within the normal range. The radiological findings were consistent with HCC. The patient subsequently underwent anatomical resection of segment VIII, and the tumor was pathologically proven to be a moderately differentiated HCC without vascular invasion. The postoperative course was uncomplicated, and she was discharged from the hospital after 23 days.

An extrahepatic tumor was found during follow-up with enhanced computed tomography at 19 months after the liver resection, but the tumor marker levels (alpha-fetoprotein and des-γ-carboxy prothrombin) were not elevated. A 45-mm LN metastasis was found with the enhanced CT. The LN appeared as a well-enhanced feature in the arterial phase (Figure 1A) and appeared washed-out in the liver parenchymal phase (Figure 1B). Angiography revealed that the hypervascular tumor was fed from both the left and right gastric arteries; the patient was diagnosed with metachronous LN metastasis from the liver.
We performed transarterial chemotherapy with 80 mg/body of cisplatin powder (IA Cali, Kaken, Tokyo) with 3 ml of ethiodized oil (Lipiodol) emulsion. This procedure was initially performed through the common hepatic artery and left gastric artery. As the LN metastasis was fed by two arteries, blood alternation through coil embolization of the left gastric artery was performed to provide the LN with a uniform blood supply. This approach enabled simultaneous infusion of both the metastatic LN and the liver (Figure 1C, D).

Trans arterial chemotherapy was performed a total of three times to control the LN metastasis and to prevent metachronous intrahepatic recurrence. The tumor was well controlled, and no new recurrent intra- or extrahepatic lesion was observed for 6 months.

LNs were systematically dissected from the celiac axis to the proper hepatic artery. Histopathological examination revealed that the metastatic lesion was single and pathologically proved metastatic HCC (Figure 2A, B). The postoperative course was uneventful, and the patient was discharged from the hospital 9 days after the operation. The patient remains in good condition without any recurrence for almost 5 years after the LN dissection.

Discussion

LN metastasis is found in 3-7.5% of patients at the time of liver resection for HCC (1, 4). Synchronous regional LN dissection for LN metastasis of HCC is uncommon because of its poor prognosis, hence no standard procedure for this has been developed, and the indications are limited. The prognosis includes a 2-year survival rate of 5% (6 out of 120 patients) and a 5-year survival rate of 7.5% (36 out of 523 patients) (3, 5).

In contrast, metachronous LN metastasis of HCC has generally been found in end-stage HCC with intrahepatic recurrences and rarely as a solitary metastasis. Few reports have described surgical dissection for metachronous LN metastases. However, most reports include a very small number of patients. Recent work analyzed the surgical treatment of either synchronous or metachronous LN metastases from HCC in 18 (0.8%) out of 2,189 cases (4). The predictor of survival in that study was the presence of hepatitis viral infection, pathological liver cirrhosis or intrahepatic recurrence. The only independent predictor was the presence of a solitary LN metastasis compared with
multiple LN metastases (14 vs. 52 months, \( p < 0.01 \)). Among these 18 patients, there were only 3 patients who displayed solitary metachronous LN metastasis. The results indicated that the frequency of resection for metachronous LN metastasis from HCC was limited.

Initially, we performed transarterial chemotherapy, but the LN metastasis was a solitary and metachronous lesion. The patient had sufficient functional liver reserve without hepatitis viral infection, and the LN metastasis was stably controlled by transarterial chemotherapy without intra- or extrahepatic recurrence for 6 months. We thus reconsidered systematic LN dissection. The patient was successfully treated and has remained alive without recurrence for the last 4 years and 3 months.

Surgical resection for LN metastases from HCC should be strictly limited because of its poor prognosis. However, the surgical approach may be ideally suited to stably-controlled solitary metachronous LN metastases. Careful re-evaluation of the status of a metastatic lesion may contribute to an improved patient prognosis.

References