Transformation of Fibrolamellar Carcinoma to Common Hepatocellular Carcinoma in the Recurrent Lesions of the Rectum and the Residual Liver: a Case Report

Hiroshi Yamamoto1, Kazuo Watanabe1, Matsuo Nagata1, Yoshimasa Yano1, Takashi Akai1, Ichiro Honda1, Satoshi Watanabe1, Hiroaki Soda1 and Osamu Matsuzaki2

Divisions of 1Gastroenterological Surgery and 2Surgical Pathology, Chiba Cancer Center Hospital, Japan

A 21-year-old man had undergone central bisegmentectomy of the liver due to fibrolamellar carcinoma (FLC). Twice, 24 and 30 months after the first operation, lymph node metastases were removed. We have reported this case previously and this is the second report of the same case. Forty-two months after the second operation to remove lymph node metastases, a recurrence occurred in the rectum and was excised. However, the tumor also recurred in the residual liver. The patient underwent heptectomy for a palliative purpose but died 16 months after the last operation. Histopathologically, the primary tumor was diagnosed as pure FLC, but the lymph node metastases had foci of the common hepatocellular carcinoma (HCC) mixed with FLC. In contrast, the recurrent tumors in the rectum and the residual liver showed the histopathological features of common HCC. Thus, during repeated recurrences, histopathological features changed from pure FLC to common HCC.

INTRODUCTION

Fibrolamellar carcinoma of the liver (FLC) is an uncommon clinicopathological variant of hepatocellular carcinoma (HCC). Owing to its infrequency, the recurrence pattern of FLC following hepatectomy cannot be described in depth (1). We have previously reported the present case in which the recurrence of FLC in lymph nodes after hepatectomy occurred repeatedly and were removed twice (2). In this paper, we report the follow-up to this case. After the second lymphadenectomy, the tumor recurred in the rectum and the residual liver and these tumors were resected. The recurrent tumors showed the characteristics of common HCC in histology, while the original tumor was the pure FLC. In the history of repeated recurrence, the lymph node metastases had foci of the common HCC mixed with FLC. This indicates that during repeated recurrence, the histopathological features of the tumor transformed from pure FLC to common HCC. We discuss the correlation between the histopathological changes and patterns of FLC recurrence.

CASE REPORT

A 21-year-old man had undergone central bisegmentectomy of the liver due to FLC on May 21, 1991. Twice, 24 and 30 months after the first operation, he underwent removal of lymph node metastases (2). Forty-two months after the second lymphadenectomy, because of complaint of bloody stool, a colonoscopy was performed. A submucosal tumor in the anterior wall of the rectum was detected. Histopathological diagnosis of the specimen obtained by biopsy was 'the suspicion of metastasis from HCC'. On August 5, 1997, low anterior resection was performed as a recurrent tumor was not identified in other sites. Macroscopically, the submucosal tumor exposed partially into the mucosa was 10.0 x 9.0 x 7.5 cm in size. Histopathologically, the tumor was consistent with the appearance of common HCC with foci of thin lamellated fibrous stroma (Fig. 1) and was associated with vascular invasion. Nine months later, follow-up MRI revealed multiple recurrent foci with thrombosis of the portal vein in the residual liver. On May 21, 1998, posterior segmentectomy of the liver and partial hepatectomy of the lateral segment were performed with the intent of tumor reduction. Macroscopically, resected specimens included four tumors, measuring 2-10 cm, with portal vein thrombi. Histopathologically, recurrent tumors in the residual liver were identified as moderately differentiated HCC (Fig. 2) with massive tumor thrombi in the portal and hepatic veins. Although transcatheter arterial infusion of anticancer drugs (epirubicin hydrochloride or zinostatin stimalamer) for remnant
Recurrence of fibrolamellar carcinoma

Figure 1. Lesion of the rectum. The tumor shows moderately differentiated HCC of common type with thin lamellated fibrous strands focally (hematoxylin and eosin, ×25).

Figure 2. Lesion of residual liver. The tumor shows moderately differentiated HCC without histological features of FLC (hematoxylin and eosin, ×25).

Figure 3. Primary tumor. The tumor tissue consisted of polygonal-shaped cells with eosinophilic granular cytoplasm and with prominent nucleoli and of intermingled thick lamellated fibrous strands. The eosinophilic cells were arranged in a trabecular pattern (hematoxylin and eosin, ×25).

tumors was performed three times during 5 months after hepatectomy, the patient died on December 19, 1998, at the age of 28.

From the histopathological review of primary tumor and lymph node metastases, the primary tumor was identified as pure FLC (Fig. 3), but the lymph node metastases consisted predominantly of pure FLC with small foci of common HCC.

DISCUSSION

FLC is a rare subtype of HCC. It occurs frequently in non-cirrhotic livers of young adults and has a better prognosis than common HCC (3,4). However, some authors insist that the histopathological differences between FLC and common HCC cannot necessarily be used as an indicator of prognosis (5,6). This controversy has not been resolved because long-term follow-up data are not available owing to the rare incidence of FLC. In 1997, Pinna et al. (1) reported the analysis of clinical data in 41 patients with FLC treated with partial hepatectomy or liver transplanta-

tion. In their report, the 5-year survival rate was over 80% in 28 cases who underwent partial hepatectomy. On the other hand, in a report from Japan (7), the 5-year survival rate was less than 50% after partial hepatectomy in 468 patients with common HCC without association of liver disease. The former group emphasized that this excellent long-term survival was accomplished not only by the slow growth of FLC but also an aggressive surgical approach for the initial tumor and tumor recurrence.

In our case, histopathological diagnosis of the metastasis in the rectum was common HCC with a partial characteristics of FLC. This lesion is assumed to be metastasized from the common HCC observed focally in lymph node metastases of FLC. Moreover, recurrence in the residual liver is considered to be the metastases from the rectal lesion because the tumors in the liver were common HCC without any component of FLC and massive tumor thrombi in the blood vessels were observed. While recurrence occurred repeatedly, histopathological features gradually transformed from pure FLC to common HCC and vascular invasion became prominent. In this patient, the disease-free period was 42 months after the surgical treatment for lymph node metastases. However, he had only a 9 month disease-free period and a 16 months survival time after the resection of rectal metastasis. This result suggests that along with the change in the nature of this tumor from FLC to common HCC, the growth rate of the tumor might have become more rapid.

There are several case reports on mixed FLC and common HCC tumors. Okano et al. (8) reported the first case in Japan of a mixed FLC and common HCC tumor and the patient survived 4 years after a hepatectomy without tumor recurrence. Reuland et al. (9) reported a similar case but it was confirmed that only a component of the common HCC in the mixed tumor of the liver metastasized to the bone. Berman et al. (4) described that in three of 12 cases with FLC, foci of common HCC were observed histopathologically and they speculated that these areas may account for those examples with vascular invasion and distant metastases. In Pinna et al.’s report (1), recurrences developed in
18 of the 28 patients who underwent partial hepatectomy and surgical procedure was applied in six patients. However, there was no detailed description of histopathological findings of primary and recurrent lesions.

In general, there is no clear evidence whether a mixed tumor of FLC with common HCC has a tendency to cause distant metastasis more than pure FLC. However, in our case, the growth of common HCC in recurrent sites of FLC was a poor prognostic factor.

References