Sarcomatous hepatocellular carcinoma without previous anticancer therapy

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Case report

A 79-year-old man with severe bloody stools went into shock as a result of hemorrhage in June 2005. He underwent emergent endoscopic hemostasis for bleeding from a sigmoid colonic diverticulum at a nearby hospital. During a whole-body examination, a liver tumor was detected, and the patient was referred to our hospital for treatment of the liver tumor. The patient had a history of cerebral infarction 1 year previously. On admission, a series of laboratory tests showed normal values for the liver enzymes. The serum alpha-fetoprotein (AFP) level was 3772 ng/ml (normal range below 10 ng/ml) and protein induced by vitamin K antagonist II (PIVKA II) was 462 mAU/ml (normal range below 40), but the serum carcinoembryonic antigen (CEA) level was within the normal range (0.7 ng/ml). The patient had neither hepatitis B surface antigen nor hepatitis C virus antibody. Abdominal ultrasonography (US) disclosed a tumor in segment 4 of the liver (S4). Most of the tumor consisted of a solid area that had a mixed pattern (Fig. 1A), and a small portion of the tumor was cystic in nature. Dynamic bolus computed tomography (CT) disclosed a lobulated and irregularly demarcated mass in S4. The tumor was not enhanced in the arterial dominant phase (Fig. 1B). Magnetic resonance imaging (MRI) showed the tumor as an area of iso-low intensity on a T1-weighted image and an area of iso-high intensity on a T2-weighted image (Fig. 2A,B). Although the appearance on these images was not typical of ordinary HCC, the patient underwent medial segmentectomy of the liver for the presumptive diagnosis of atypical HCC in July 2005. The method of medial segmentectomy of the liver was selected in consideration of the patient’s advanced age and because there was no intrahepatic metastasis or vasal invasion.

Macroscopically, the resected tumor was whitish-yellow, measured 70 × 65 × 45 mm, and arose from the normal liver. The tumor was of a simple nodular type.
with extranodular growth and included a necrotic area. The cut surface of the tumor is shown in Fig. 3 (the cut is almost at the same level as the CT image shown in Fig. 1B). Microscopically, a typical trabecular pattern was observed in the majority of the tumor, which consisted of moderately to poorly differentiated HCC. Adjacent to the tumor nests, spindle cells thickly proliferated and were composed of a sarcomatous component (Fig. 4A). The transition from a glandular structure to the sarcomatous component was observed (Fig. 4B). In the sarcomatous component, chondrogenesis was observed around the necrotic tissue of the HCC (Fig. 4C). Almost all the trabecular component exhibited immunoreactivity for cytokeratins, whereas only a very small part was slightly immunoreactive in the sarcomatous component. Moreover, the trabecular component had no immunoreactivity for vimentin, whereas one part was apparently immunoreactive in the sarcomatous component. Finally, the tumor was diagnosed as HCC with sarcomatous change, Eg, Fc(−), Sf(+), S1, Vp1, Vv0, Va0, B0, IM0, SM(−), T3, N0, M0, stage III. The postoperative course was uneventful, and the patient was discharged 13 days after the surgery. At present, about 1 year has elapsed since the operation and the patient is still alive and has not suffered a relapse.

**Discussion**

Although anticancer therapy, such as transarterial chemotherapy or chemoembolization, percutaneous ethanol injection therapy, and radiofrequency ablation, is