

Case Report

Concurrent occurrence of primary hepatocellular and cholangiocellular carcinoma in the different part of the liver: a case report

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Abstract: Combined hepatocellular-cholangiocarcinoma which shows features of both hepatocellular and biliary epithelial differentiation is a rare form of primary liver cancer. The rarer is that the two types of cancer occur in the different lobe of the same liver concurrently.

Keywords: Hepatocellular carcinoma, cholangiocellular carcinoma, liver, diagnosis, treatment

Introduction

Malignant tumor of liver consists of two major types: hepatocellular carcinoma and cholangiocarcinoma, which originates from hepatic cells and bile duct epithelial cells respectively. Although mixture of two types of cellular components in one mass has been reported and well documented, there are patients with two carcinomas concurrently and separately [1-4]. We report here on a rare case that hepatocellular and cholangiocellular carcinoma concurrently occurred in the different liver lobe of the same patient.

Case report

The 58-years old patient was admitted to our Hospital because of dull pain in the right upper abdomen for 4 years and occupancy lesions in the liver for one week on Dec 15, 2010. The patient had been undergone annual routine checkup until finding lesions in the liver one week ago. No specific complains, but a history of chronic hepatitis B for 20 years was claimed. Blood routine showed no decrease in blood cells counting including red blood cells, white blood cells and platelet. Hepatitis B virus exam shows only surface antigen positive. Alpha Feto-protein and CA199 levels are normal.

Comprehensive abdominal ultrasound found a low-echo mass of about 47 multiple 32 centimeters in caudate lobe and a high-echo mass of about 24 multiple 17 centimeters in segment IV of liver. Further ultrasonic contrast with hexafluoride microbubbles found both the masses showing high enhancement in arterial phase and low enhancement in portal and delayed phases. CT scan showed that both caudate lobe and segment IV masses were feathered with enhancement in arterial phase and lower enhancement compared with circumambient liver parenchyma in portal phase. See **Figure 1**.

After considerate assessment of liver function and preoperative preparation, the two masses were dissected in open operative procedure. Slight liver cirrhosis and splenomegaly was found during operation. Both the two masses were presented with integrated capsules and the fragile texture. Histological diagnosis of the specimens shows highly differentiated hepatocellular carcinoma in caudate lobe and moderately differentiated cholangiocarcinoma. See **Figure 2**.

Follow up of the patient with monthly ultrasound and CT scan found no tumor recurrence. After 1 year from operation procedure, the patient

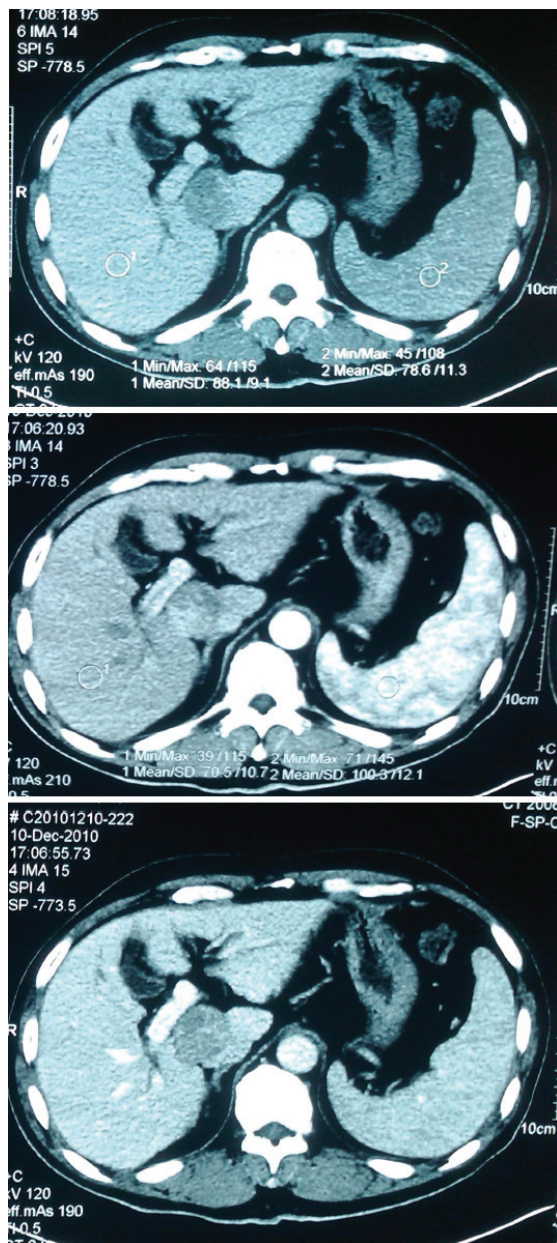


Figure 1. Masses in caudate lobe and segment IV. A, non-contrast; B, arterial phase; C, portal phase.

seems to be in good general condition. Now he is able to carry out his basic physical labor and came back to work.

Discussion

Combined hepatocellular-cholangiocarcinoma (CHC), a rare primary malignant tumor, accounts

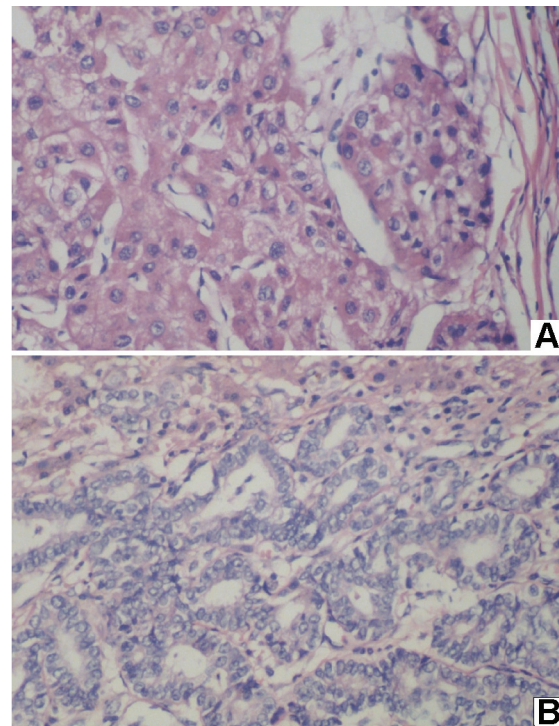


Figure 2. Microscopic observation of pathological sections under 200 magnified field, hematoxylin and eosin (HE) staining. A, highly differentiated hepatocellular carcinoma; B, moderately differentiated cholangiocarcinoma.

for 1.2% to 14.2% in primary liver cancer [1, 3, 5, 6]. Allen and Lisa [1] firstly reported 5 cases of the combined liver cell and bile duct carcinoma in 1949 and sorted them into three types. Type 1 involves in separate neoplastic masses occurred in one case, whereas Type 2 refers to contiguous masses which may mingle as the two different tumors grow. Type 3 is known as individual masses which is presented with intimately intermingling of both features. Goodman et al [2] also classified CHC into three subtypes according to histological findings. Type I is defined as collision tumors which is a coincidental occurrence of both hepatocellular and cholangiocellular carcinoma in different or contiguous parts of the liver in the same patient. Type II presents with transitional tumors which exist areas of intermediate differentiation and an identifiable transition between hepatocellular and cholangiocellular carcinoma and type III refers to fibrolamellar tumors which appear both hepatocellular and cholangiocellular differentiation throughout the tumor and no separate

area of them. So far, there are no uniform criteria for the diagnosis of CHC. Some studies only involved in Allen type 3 tumors and others included all three types' tumors. The case we report of concurrently occurrence of primary hepatocellular and cholangiocellular carcinoma in the different liver lobe of the same patient can range in type 1 by Allen and type I by Goodman which have only one case of the same type respectively. There are still some sporadic reports that accord with the case in our paper, some of which covered all types of CHC [3, 4, 7, 8].

Actually this type of tumors we report is excluded from CHC according to WHO classification [9], but they are still studied in the literature relating to CHC. Further study [10] revealed that the two separate tumors occurring in different part of the liver derive from two independent neoplastic clones according to the genetic findings. So it is necessary to notice that this type of tumors is different from other types and it is important to elucidate the pathogenesis, strategy of treatment and prognosis. Recently Ariizumi et al [11] showed that the mixed type of CHC had higher incidence of portal invasion than combined type. But regardless of Allen and Lisa class, several studies showed CHC are presented with poor outcomes relating to lymph node metastasis and positive resection margins [4, 11]. In our case, operation procedure was performed without succedent chemotherapy or radiotherapy due to the negative margins of excision, integrated capsules and tumor sizes. The result of treatment is acceptable and certainly need further follow up. In our opinion, the prognosis of concurrently occurrence of the two separate tumors is no worse than either one of them and the outcome after operation may range between the mixed type and either of two malignant tumors. But more cases should be accumulated to illuminate the feature and therapy strategy of the unique tumor.

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