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Case Report

A Resected Case of Icteric Type Hepatoma with Tumor Thrombi in Common Bile Duct

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71-year-old male was admitted to the department of gastroenterology of our hospital to treat for jaundice at July 10, 2002. His serum total bilirubin was 18.3 mg/dl and Alpha-fetoprotein was 50.2 ng/ml. Then, percutaneous tanshepatic biliary drainage (PTBD) was performed through the left lateral and the right anterior segmental bile. Computed tomography with enhancement showed the tumors in the medial segment and caudate lobe with tumor thrombi extending to the common bile duct. Left hemihepatectomy and extrahepatic bile duct resection were performed. As a gross finding of the removed specimen, the tumor thrombi extended through the left bile duct into the common bile duct from medial segmental tumor without necrosis and hemorrhage. Histological examination showed the tumor to be moderately differentiated hepatocellular carcinoma. The hepatic arterial, portal and hepatic venous branches were not involved by the tumor.

Key Words : Hepatocellular carcinoma (HCC), Bile duct thrombi, Icteric type hepatoma

ABBREVIATIONS : Hepatocellular Carcinoma (HCC), Percutaneous Transhepatic Biliary Drainage (PTBD)

Introduction

In patients with hepatocellular carcinoma (HCC), jaundice is usually recognized as a terminal stage due to severe liver dysfunction underlying progressive cirrhosis or massive tumor infiltration of the liver parenchyma. In these critical cases, obstructive jaundice associated with HCC could be observed in mechanical obstruction of major bile duct due to cancer invasion, migrating tumor necrosis, blood clots and compression of the biliary tract. For such cases, Lin et al have clinically classified as icteric hepatoma[1]. The icteric type hepatoma is a rare occurrence in HCC, which was reported 1.7-3.0%[2)~4)]. The resectability rate is also extremely low, which was noted 10-18% in this type of hepatoma[3)5)], and it caused poor prognosis. However, if possible, the complete surgical resection with curative intent could be only strategy to lead a long-term survival. In the present, we show our experience of the icteric type hepatoma and discuss the management of this type tumor.

Case Report

A 71-year-old male was admitted to the department of gastroenterology of our hospital to treat for jaundice at July 10, 2002. His serum total bilirubin was 18.3 mg/dl, Alkaline phosphatase 767 IU/ml, normal transamylase levels, Prothrombin time 91% and Alpha-fetoprotein 50.2 ng/ml. Hepatitis B viral surface antigen was negative, but hepatitis C viral antibody was

Fig. 1 PTBD catheter cholangiography. The defect of left biliary branch extending to the common bile duct was detected.

positive. Ultrasonography showed a mass formation from the left biliary tract to common bile duct. Thus, percutaneous transhepatic biliary drainage (PTBD) was performed through the left lateral and the right anterior segmental bile ducts. Cholangiography through PTBD catheter demonstrated tumor thrombi extending to the common bile duct (**Fig. 1**). The frequent cytology of bile from PTBD tube showed no malignant results. Computed tomography with enhancement showed the tumors in the medial segment and caudate lobe with tumor thrombi (**Fig. 2**). There were not any tumors detected in the right lobe. Therefore, after decrease in serum total bilirubin, left hemihepatectomy with extrahepatic bile duct resection was performed on October 1, 2002. The distal bile duct was closed completely and the proximal part (right biliary branch) was reconstructed by hepaticojejunostomy.

As a gross finding of the specimen (**Fig. 3a**), the tumor thrombi extended through the left hepatic duct into the common bile duct from medial segmental tumor without necrosis and

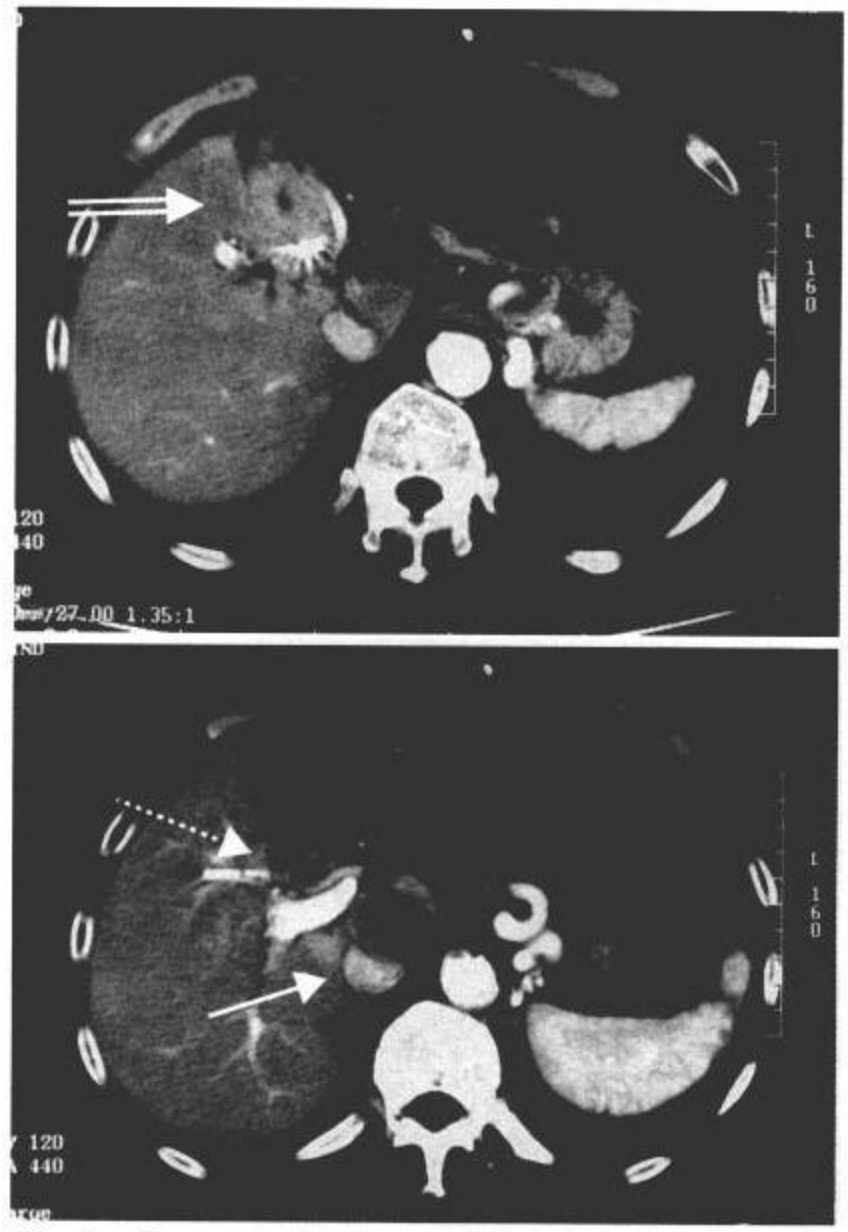

Fig. 2 Computed tomography with enhancement. The tumors in the medial segment (white arrow) and caudate lobe (black arrow) with filing tumor thrombi in dilated biliary tract (black dot arrow) were noted. There were not any tumors detected in the right lobe.

hemorrhage. And extrahepatic growing type tumor, measured 4.2×3.8×3.6 cm, was also noted in the left caudate lobe. On sectioning (**Fig. 3b**), 2.7×2.5 cm non-capsulated tumor, like gathered small mass, in the medial segment showed massive infiltration of Glisson's capsule and intrabile duct tumor formation. Histological examination showed the tumor to be moderately differentiated hepatocellular carcinoma. The hepatic arterial, portal and venous branches were not involved by the tumor.

The patient is in good health for 3 years after surgery, despite local ablation therapy for recurrent tumor after 2 year was performed.

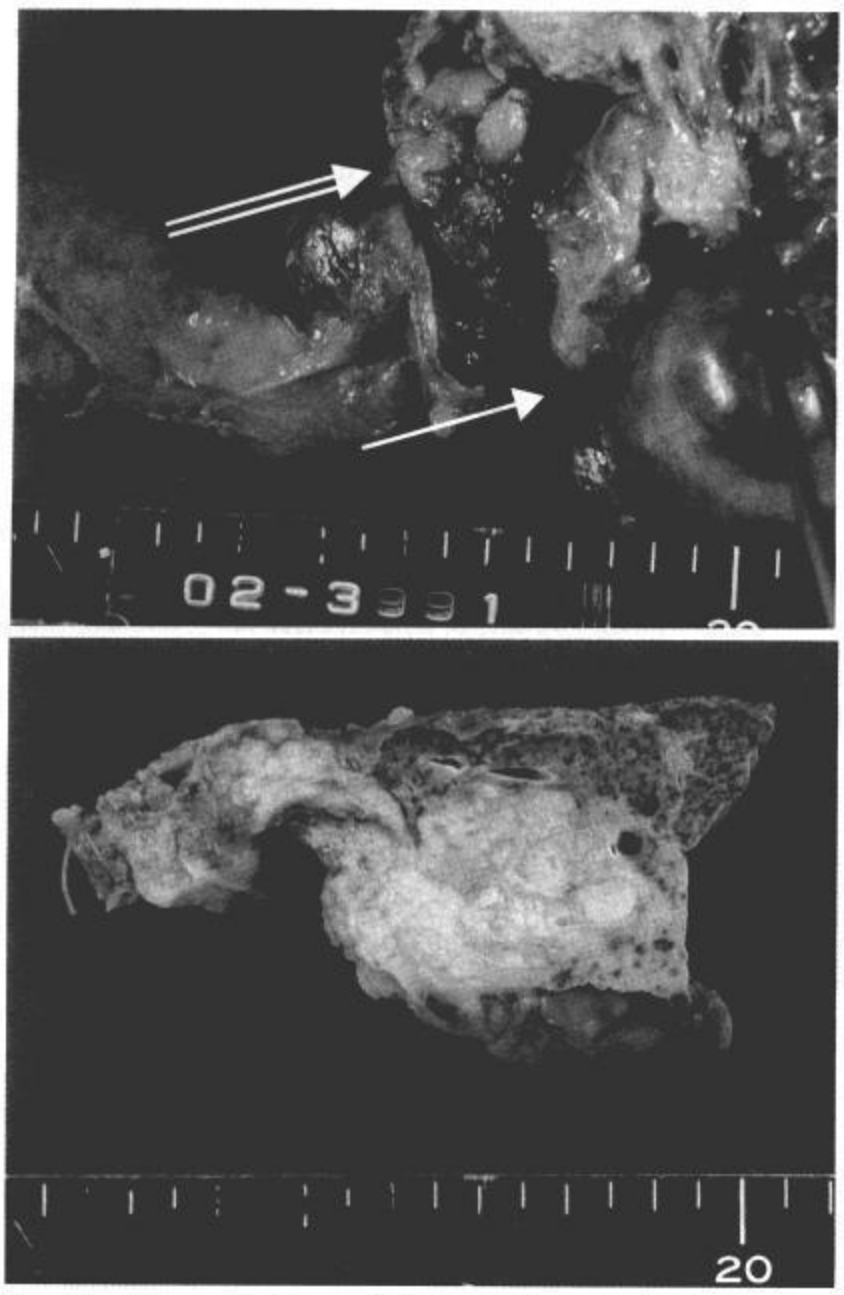

Fig. 3 Gross finding of the specimen. a) The tumor thrombi extended through the left bile duct into the common bile duct from medial segment tumor without necrosis and hemorrhage (white arrow). Extrahepatic growing type tumor was also noted in left caudate lobe measured 4.2×3.8×3.6 cm (black arrow). b) On sectioning, 2.7×2.5 cm non-capsulated tumor, like gathered small mass, in medial segment showed massive infiltration of Glisson's capsule and intrabile duct tumor formation.

a
b

Discussion

Most common reason of jaundice with HCC is caused by liver failure due to critical liver cirrhosis. In contrast, obstructive jaundice associated with HCC is a rare occurrence and first reported by Mallory in 1947[6]. The pathogenesis of obstructive jaundice in HCC includes[1] invasion or pressure to biliary system by a massive liver tumor ; 2) compression by lymph nodes ; and 3) hematoma formation by hemobilia[7)~9)]. And also the pattern of invasion to biliary system has been classified into four types[4] ; 1) tumor thrombi distal to the secondary division of the intrahepatic ducts ; 2) invasion into the first order branch ; 3a) invasion to the common bile duct ; 3b) thrombi fixed in the common bile duct distant from the main tumor ; 4) movable and detached thrombi from main tumor. This case is indicated to belong to type 3b.

Frequent cytological examination of the bile from the PTBD might be considered to be valuable for the diagnosis of HCC with intrabiliary duct tumor. However no positive cases have been reported with this examination[10], since the tumor casts in the bile duct might be generally necrotic and hemorrhage[9]. And also, in HCC, tumor thrombosis of the portal or hepatic vein by invasion of blood vessels is a common feature. Thus, an accurate preoperative diagnosis of tumor growth into the bile duct from a hepatoma might be difficult. In the present case, the presence of a raised AFP level and positive hepatitis viral reaction certainly help to establish the correct judgment[11].

As a strategy for HCC with biliary tumor thrombi, Shiomi et al evaluated the aggressive treatment[12]. According the report, the thrombectomy through choledochotomy or extrahepatic bile duct resection was reported to lead 47% and 28% of 3- and 5-years survival rates, which were similar to the cases without tumor thrombus, therefore the presence of biliary tumor thrombi was not a significant prognostic factor. Focusing on the meaning for bile duct resection, it might be not always needed, since histological evidence of direct tumor invasion into bile duct wall was not noted and the recurrence pattern was not related to bile duct

thrombi[13]. Namely, it is relatively easy to remove non-tightly adherent tumor from bile duct at operation, and underlying ductal epithelium is reported to be fairly well preserved in most cases[4)9)12)13)]. In the present case, the observation for removed specimen indicated that the bile duct tumor thrombi could be removed without the resection of common bile duct. In contrast, according to the report for tight adhesion of tumor thrombi to intrahepatic bile duct[14], intrahepatic bile duct resection should be always considered to achieve a complete surgery. Therefore, most favorite treatment for this type of tumor is indicated to be curative resection of the primary lesion with the involved intrahepatic bile ducts[3)7)8)11)]. However, because most tumors are often present close to the hepatic hilum, and major hepatectomy could not be suitable for the patients with liver cirrhosis, operation might not be always the most favorite procedure. As a treatment for obstructive jaundice caused by unresectable HCC, endscopic biliary drainage was reported to lead an improvement of the quality of life even for the patients with the first branches of portal vein or portal trunk[15]. Furthermore, radiotherapy was also reported to be effective for the intraductal thrombus[16].

As a conclusion, to determine the optimal operative procedure, it should be important to lead the correct diagnosis for HCC with ascertaining the point of involved biliary branches.

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