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An unusual gallbladder carcinoma with tumor thrombus in the common bile duct

ABSTRACT

We described a special infiltration manner of gallbladder carcinoma with tumor thrombus in the common bile duct. Between February 2003 and January 2005, the patients with gallbladder carcinoma who were identified of tumor thrombus in the common bile duct in surgical procedure were retrospectively analyzed. Abdominal ultrasound and magnetic resonance cholangiopancreatography were used for preoperative diagnosis. All three patients were given radical operation. All three patients recovered well after surgery, whowere respectively alive for 30 months, 17 months, and 23 months without tumor recurrence, and 58 months, 41 months, and 40 months for survival time after operation. Gallbladder carcinoma with tumor thrombus in the common bile duct was very rare but with relatively special clinical manifestation and characteristic radiography manifestation.

KEY-WORDS: Diagnosis, gallbladder carcinoma, MRCP, surgery, tumor thrombus

Yang Xin-Wei, Yang Jue, Zhang Bao-Hua, ShenFeng

Eastern Hepatobiliary Surgery Hospital, Second Military Medical University, Shanghai, China

For correspondence: Dr. Zhang Bao-hua, Eastern Hepatobiliary Surgery Hospital, Second Military Medical University, Changhai Road 225, Shanghai 200438, China. Dr. Shen Feng, Eastern Hepatobiliary Surgery Hospital, Second Military Medical University, Changhai Road 225, Shanghai 200438, China. E-mail: weicelia@163.com

INTRODUCTION

Gallbladder carcinoma (GBC) has geographic and ethnic variation throughout the world and is a highly fatal malignant tumor.[1] The poor prognosis of GBC is due to the anatomic position of the gallbladder and the nonspecific symptoms and signs. These characteristics of gallbladder carcinomas result in advanced primary tumors and lymph node metastasis at the time of diagnosis.[2]

GBC poses a challenge for both the clinician and the surgeon to improve clinical outcomes.[3] The most common symptoms of this disease are pain (76%), jaundice (38%), anorexia (32%), and weight loss (39%).[4] However, gallbladder carcinoma with tumor thrombus in the common bile duct (CBD) occurs rarely, which was previously reported by a case report in the literature.[5] We reported here three cases of GBC with tumor thrombus in the CBD, who were identified by preoperative magnetic resonance cholangiopancreatography(MRCP) and treated by radical operation. To the best of our knowledge, there is the largest samples in the literature.

CASE REPORTS

Case 1

A 63-year-old woman was admitted to our hospital with a 20-day history of painless and progressive jaundice. She had 10 kg weight loss during recent 6 weeks. MRCP showed a filling defect in the CBD, gallbladder wall irregular thickening, a 3 cm diameter cholelithiasis, obstruction of the proximal CBD, a dilated intrahepatic and extrahepatic biliary tree [Figure 1a]. CT pointed gallbladder cancer invasion in the right lobe and caudate lobe of liver [Figure 1b].

Under general anesthesia, the operation was performedon 19 February 2003. There was an intra-fistula between the gallbladder and duodenum. A huge stone almost completely blocked the cystic duct. There were a number of soft and isolated palpable lymph nodes surrounding the CBD and hepatic artery. Repair of choledochalduodenal fistula, cholecystectomy, liver parenchyma of gallbladder bed, extrahepatic biliary tree, and skeletonization of the hepatoduodenal ligament, combined with hilar biliary duct and jejunum Roux-en-Y anastomose, were performed on the patient. Choledochotomy was performed, revealing that the lumen of the CBD contained a soft mamillary parenchyma mass.

Case 2

A 62-year-old women with history of 1-month upper abdominal pain was admitted to our hospital. Physical examination revealed a palpable mass, 14cm × 8cm in size, in the right upper abdomin. MRCP showed gallbladder enlargement, irregular parenchyma which mildly strengthened after potentiation filling of the gallbladder, cystic duct, and CBD [Figure 2a]. The intrahepatic biliary duct was slightly dilated.

Under general anesthesia, the same operation was given on 11 November 2003. Gallbladder was swollen evidently approximately 14 cm × 8 cm × 5 cm

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in size. The cervix and somatic part of the gallbladder contained a soft palpable mass approximately 5cm × 4cm in size. The CBD was dilated 1.8cm in diameter. There were a number of soft and isolated palpable lymph nodes in the hepatoduodenal ligament. Choledochotomy was performed, which revealed that the lumen of the CBD was filled with soft, crusty,resorbable cancer embolus from the cystic duct [Figure 2b].

Case 3

A 54-year-old woman was admitted with painless and progressive jaundice.

MRCP showed the occupation of gallbladder with cholelithiasis, dilated intrahepatic and extrahepatic biliary ducts, and tumor thrombus in the CBD [Figure 3a]. Under general anesthesia, the same opration was given on 27 January 2005. The gallbladder was huge, 16 cm × 10 cm × 6 cm in size. Its cervix and somatic wall were irregularly thickened significantly. There were a number of soft and isolated palpable lymph nodes along the CBD and hepatic artery. The CBD was dilated at 2.0cm in diameter. Choledochotomy was performed, which revealed that the lumen of the CBD contained a big soft parenchyma mass from the cystic duct [Figure 3b].

Postoperative pathology of the three cases revealed adenocarcinoma infiltrating to the muscular layer of the gallbladder. Three patients were recovered well. The follow-up was complete until 30 June 2011. Three patients were respectively alive for 30 months, 17 months, and 23 months without tumor recurrence. The survival lifetime was respectively 58 months for case 1, 41 months for case 2, and 40 months for case 3.

DISCUSSION

To date, only Midorikawa *et al*. described one case of a tumor embolus in the CBD from gallbladder carcinoma; however, the tumor embolus he described was separated from the tumor.[5] According to our own cases and literature review, gallbladder carcinoma with tumor thrombus in the CBD has the specialclinicopathologic characteristics and better prognosis. So correct understanding of this particular type of gallbladder carcinoma will significantly alter some previous views to bringing more gospel to these patients.

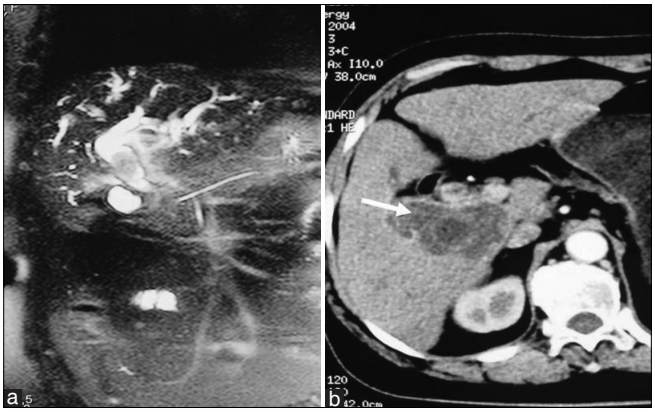

Figure 1: (a) In MRCP photography, the arrow points at the filling defect in the CBD, (b) In CT photography, the arrow points at the gallbladder cancer invasion in the right lobe and caudate lobe of the liver

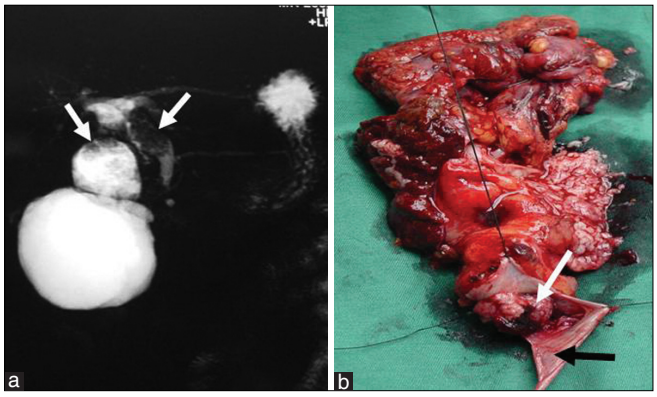

Figure 2: (a) In MRCP photography, arrows point at the filling defect in the CBD and neck of the gallbladder, (b) In surgery specimens,the white arrow points at the cancer embolus in the CBD and the black arrow points at the smooth inner surface of the CBD

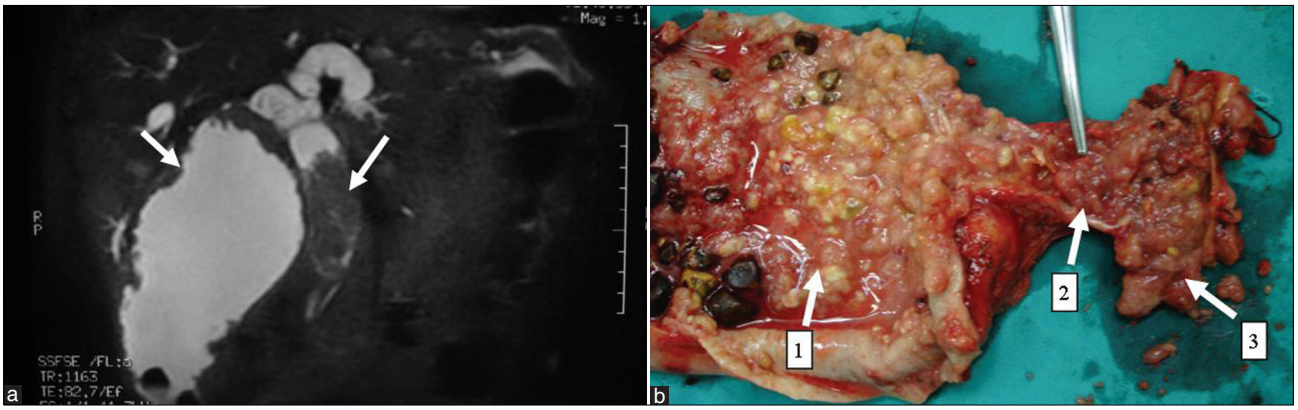

Figure 3: (a) MRCP photography shows the filling defect in the CBD and gallbladder, (b) In surgery specimen, arrows 1-3 point at tumor tissues in the gallbladder, cystic duct, and CBD, respectively

There are certain specific features of GBC with cancer embolus extending into the CBD. Obstructive jaundice may not be necessary. The tumor thrombus were loose. Therefore, there was still a gap between tumor thrombus and the bile duct wall permiting bile passing.

GBC with cancer embolus extending into the CBD has different imaging manifestations on MRCP from GBC infiltrating the hilar bile duct. The latter usually displays abrupt truncation of the extrahepatic bile duct on MRCP. In contrast, GBC with cancer embolus in the CBD manifested that the dilation of extrahepatic and intrahepatic bile ducts was lacked of asymmetry. While GBC with tumor thrombus in the CBD usually developed intraductally, infiltration of liver was uncommon. In our study, postoperative pathology revealed that all three patients were only invaded to muscular layer.

It has been reported that advanced gallbladder carcinoma with obstructive jaundice has a poor prognosis, and the advantages of radical surgery for these patients are still controversial. Observing our own patients and the patient reported by Midorikawa,[5] since obstructive jaundice caused by tumor thrombus is not always associated with advanced staging, radical surgery should be performed. The prognosis of gallbladder carcinoma with tumor thrombus in the CBD after radical surgery may be apparently better than gallbladder carcinoma with invasion of hilar tissues.

In conclusion, gallbladder carcinoma with tumor thrombus in the CBD had the different clinical, radiological, and prognosis characteristics, which need to be awared by radiologists and clinicians as a special type of gallbladder carcinoma.

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