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Utility of hepatobiliary scintigraphy for recurrent reflux cholangitis following choledochojejunostomy: A case report



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ABSTRACT

INTRODUCTION: Reflux cholangitis is a frequent complication of Roux-en-Y choledochojejunostomy.

PRESENTATION OF CASE: A 68-year-old male underwent left lobectomy of the liver, bile duct resection and choledochojejunostomy for intrahepatic cholangiocarcinoma located in Segment 2 of the liver, 40 mm in diameter with a lymph node metastasis 5 years ago. He had frequent recurrences of postoperative reflux cholangitis and hepatic abscesses and was treated with antibiotics each time. Postoperative adjuvant chemotherapy was scheduled, but due to recurrent cholangitis it was difficult. Although double balloon endoscopy for endoscopic retrograde cholangiography was performed, no stenosis was found in the choledochojejunostomy anastomosis, and no defect suspected of calculus and stenosis were found by contrast. Antibiotics had to be administered for a long time because it recurred when antibiotics were discontinued. This time, a tumor 2.0 cm in diameter was detected in segment 7 of the liver on follow-up computed tomography. The preoperative diagnosis was recurrent Intrahepatic cholangiocarcinoma. Hepatobiliary scintigraphy was carried out in preparation for concomitant treatment of his reflux cholangitis. Retention in the blind loop of the choledochojejunostomy was retarded, and the excretion was delayed. Therefore, hepatectomy and resection of the blind loop were performed. We confirmed improvement of stasis in the blind loop on postoperative hepatobiliary scintigraphy. The postoperative course was uneventful, and antibiotics were not required.

DISCUSSION: Hepatobiliary scintigraphy may be able to clarify the mechanism underlying reflux cholangitis.

CONCLUSION: Hepatobiliary scintigraphy was useful for the treatment of recurrent reflux cholangitis in this case.

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1. Introduction

Reflux cholangitis is the most common complication of Roux-en-Y choledochojejunostomy [1]. Sugawara et al. [2] recently reported that approximately 70% of patients who underwent hepatobiliary resection with choledochojejunostomy had a positive bile culture. Hence, cholangitis resulting from reflux of intestinal contents across the choledochojejunostomy is common, occurring in approximately 10% of patients [3]. Reflux cholangitis may result in

anastomotic strictures, stone recurrence, and liver abscesses [4]. Long-term reflux cholangitis could also increase the risk of tumorigenesis [5].

Abnormalities of the biliary tree resulting in stasis, reflux, or obstruction predispose the patient to symptomatic infection. Treatment for acute cases is based on supportive care and antibiotics, which are frequently recommend. Definitive treatment for stone disease, strictures, and other anatomic abnormalities requires endoscopic or surgical intervention. However, a clinically useful examination to determine the need for surgical intervention has not been established.

This case report has been reported in line with the SCARE criteria [6].

2. Presentation of case

A 68-year old male underwent left lobectomy of the liver with bile duct resection and choledochojejunostomy for the tumor

Abbreviations: ICC, intrahepatic cholangiocarcinoma; CT, computed tomography; S7, segment 7.

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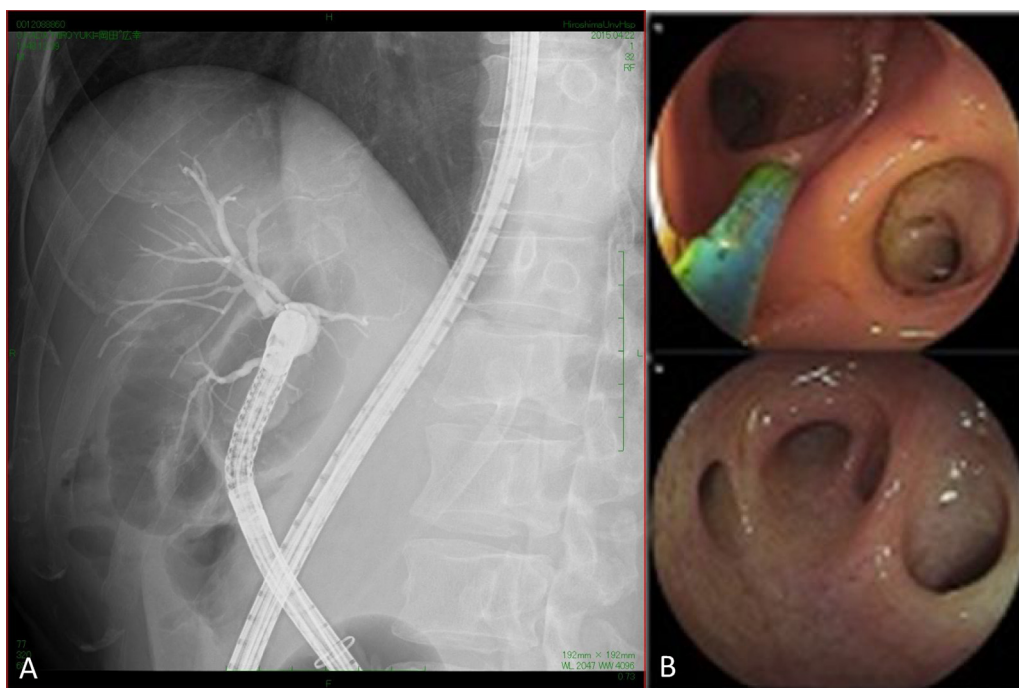


Fig. 1. Double-balloon endoscopy for endoscopic retrograde cholangiography. A. There were no defects suspected of calculus and no stenosis. B. Cannulation was performed into the bile duct.

Table 1
Representative febrile episodes and infectious work-up.

Time from postoperation (month)	Symptoms	diagnosis	Bile cultures	Treatment
2	Fever	Reflux cholangitis, Liver abscess	Klebsiella pneumoniae	MEPM → LVFX
3	Fever	Reflux cholangitis, Liver abscess	Enterococcus faecalis	MEPM → LVFX
4	Fever	Reflux cholangitis	Undetectable	MEPM
12	Fever	Reflux cholangitis	Undetectable	SBT/CPZ → SBT/ABPC
16	Fever	Reflux cholangitis	Undetectable	CPFX
25	Fever	Reflux cholangitis	Undetectable	CPFX
33	Fever	Reflux cholangitis	Undetectable	CPFX
36	Fever	Reflux cholangitis	Enterococcus faecalis	CPFX
48	Fever	Reflux cholangitis	Citrobacter freundii	MEPM

MEPM, meropenem; LVFX, levofloxacin; CPFX, ciprofloxacin SBT/CPZ, sulbactam/cefoperazone; SBT/ABPC, sulbactam/ampicillin.

located in Segment 2 of the liver, 40 mm in diameter with a lymph node metastasis 5 years ago. The pathological diagnosis was intrahepatic cholangiocarcinoma (ICC) and there was one metastasis to the lymph node. He was hepatitis B positive and administered and was administered entecavir. Although the ICC has not recurred so far, he has had frequent recurrences of postoperative reflux cholangitis and hepatic abscess and was treated with antibiotics each time. Postoperative adjuvant chemotherapy was scheduled, but due to recurrent cholangitis it was difficult. Every time reflux cholangitis occurred, double-balloon endoscopy for endoscopic retrograde cholangiography was performed. There is no stenosis in the choledochojunostomy anastomosis. The anterior segment and posterior segment bile duct is visualized by contrast. There were no defects suspected of calculus and no stenosis (Fig. 1A). Cannulation was performed into the bile duct (Fig. 1B), bile was collected and cultured. During the 5 years, he experienced several febrile episodes caused by the reflux cholangitis. He was admitted to our hospital with sudden fever and recovered with antibiotics determined by bile culture results (Table 1). After discharging, he continuously administered the antibiotics for about few weeks, but cholangitis recurred in a week after he stopped the antibiotics. As the cholangitis recurred every time the antibiotics were stopped, he was prescribed levofloxacin or ciprofloxacin on long-term antibiotic prophylaxis.

A tumor 2.0 cm in diameter was detected in segment 7 (S7) of the liver on follow – up computed tomography (CT). ICC recurrence was suspected and he was admitted to our hospital for surgical treatment of the hepatic tumor. The patient was asymptomatic and had no abnormal findings on physical examination. Laboratory findings on admission included white blood cell and platelet counts of 4040/ μ L and 162000/ μ L, respectively; hemoglobin, albumin, and total bilirubin levels of 13.4 g/dL, 4.2 g/dL, and 0.6 mg/dL, respectively; and aspartate and alanine aminotransferase, alkaline phosphatase, and gamma-glutamyl transpeptidase concentrations of 23 U/L, 17 U/L, 234 U/L, and 18 U/L, respectively. The patient had a prothrombin time (percent) of 91%. His Child-Pugh grade was A. The indocyanine green retention rate at 15 min was 10.8%. The results for hepatitis B virus antibody were positive. Serum duke pancreatic monoclonal antigen type 2 was elevated (4500.0 U/mL). Serum carcinoembryonic antigen (1.8 ng/mL), carbohydrate antigen 19-9 (17 U/mL), alpha-fetoprotein (2.1 ng/mL), protein induced by the vitamin K antagonist (22 mAU/mL), and s-pancreas-1 antigen (14.0 U/mL) levels were within normal reference limits. Abdominal CT scans revealed heterogeneous internal enhancement of the tumor in the arterial and venous phases. There was no lymph node enlargement (Fig. 2). Abdominal magnetic resonance imaging revealed low signal intensity on T1-weighted images, high signal intensity on T2-weighted images, and high signal intensity on dif-

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