Early Bile Duct Cancer Detected by Direct Peroral Cholangioscopy with Narrow-Band Imaging after Bile Duct Stone Removal

Hyung Ki Kim, Jong Ho Moon, Hyun Jong Choi, Hee Kyung Kim*, Seul Ki Min, Jong Kyu Park, Young Deok Cho, Sang-Heum Park, and Moon Sung Lee

Digestive Disease Center, Department of Internal Medicine and Pathology*, Soonchunhyang University School of Medicine, Bucheon, Korea

Cholangioscopy not only enables the direct visualization of the biliary tree, but also allows for forceps biopsy to diagnosis early cholangiocarcinoma. Recently, some reports have suggested the clinical usefulness of direct peroral cholangioscopy (POC) using an ultra-slim endoscope with a standard endoscopic unit by a single operator. Enhanced endoscopy, such as narrow band imaging (NBI), can be helpful for detecting early neoplasia in the gastrointestinal tract and is easily applicable during direct POC. A 63-year-old woman with acute cholangitis had persistent bile duct dilation on the left hepatic duct after common bile duct stone removal and clinical improvement. We performed direct POC with NBI using an ultra-slim upper endoscope to examine the strictured segment. NBI examination showed an irregular surface and polypoid structure with tumor vessels. Target biopsy under direct endoscopic visualization was performed, and adenocarcinoma was documented. The patient underwent an extended left hepatectomy, and the resected specimen showed early bile duct cancer confined to the ductal mucosa. (Gut Liver 2011;5:377-379)

Key Words: Early bile duct cancer; Direct peroral cholangioscopy; Narrow band imaging

INTRODUCTION

The early diagnosis of cholangiocarcinoma (CC) is important because surgery is the only curative treatment. Cholangioscopy not only enables direct visualization of the biliary tree, but also allows forceps biopsy to diagnosis early CC.1-3 However, the clinical use of percutaneous4 or peroral cholangioscopy using a “mother-baby scope”1-5 is limited because of its invasiveness or inconvenience. Recently, some reports have indicated the clinical usefulness of direct peroral cholangioscopy (POC) using an ultra-slim endoscope1-5 with a standard endoscopic unit by a single operator. Enhanced endoscopy, such as narrow band imaging (NBI), can be helpful for detecting early neoplasia in the gastrointestinal tract.5-7 NBI is easily applied during direct POC using an ultra-slim endoscope. We report a case of early bile duct cancer diagnosed at direct POC with NBI using an ultra-slim endoscope.

CASE REPORT

A 63-year-old woman was admitted to the emergency room with right upper quadrant pain with fever over 2 days. Laboratory findings were as follows: white blood cell count 14,400/µL, total/direct bilirubin 2.89/2.09 mg/dL, gamma-glutamyltranspeptidase 1,470 IU/L, and alkaline phosphatase 1,334 IU/L. Abdominal computed tomography showed abnormal stricture of the intrahepatic duct. (Fig. 1.)
L. Abdominal computed tomography showed bile duct dilation and high density stone on ampullary portion (Fig. 1). After the removal of the impacted stone on the ampullary orifice and nasobiliary drainage, clinical symptoms were improved. On the 3rd hospital day, we performed endoscopic retrograde cholangiography (ERC) to evaluate for remnant stones. ERC showed no remnant stone but duct dilation on left hepatic duct and short segment stricture on the orifice (Fig. 2).

We examined the stricture under endoscopic visualization using intraductal balloon-guided direct POC using an ultra-slim upper endoscope (GIF-XP260N; Olympus, Tokyo, Japan) as our previous report.6 The endoscope was inserted into the ampulla of Vater. After advancing the 5 F balloon catheter (MTW Endoskopie, Wesel, Germany) through the stricture via the guidewire, the balloon was inflated to anchor it inside the left hepatic duct. The endoscope was advanced over the balloon catheter into the proximal bile duct using the ropeway method (Fig. 3). We observed the stricture under white light (WL) and NBI (Evis Lucera 260 System; Olympus) examination.

The WL examination showed ill-defined hyperemia at the stricture site. NBI showed better contrast than did the WL examination, with a well-defined margin and prominent, thickened vascular markings (Fig. 4). We performed a target biopsy of the lesion using biopsy forceps (FB-19K-1; Olympus). Histopathological examination revealed a well-differentiated adenocarcinoma. The patient underwent an extended left hepatectomy. Histopathologically, the resected specimen showed focal papillary adenocarcinoma confined to the ductal mucosa (Fig. 5).

**DISCUSSION**

Cholangioscopy provides advantages over endoscopic retrograde cholangiopancreatography (ERCP) for the diagnosis of lesions in the bile duct. Visual information from the endoscope

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**Fig. 2.** Cholangiogram showing stricture of the left hepatic duct with proximal dilatation.

**Fig. 3.** Fluoroscopy image of the direct peroral cholangioscopy with an ultra-slim endoscope showing the advance of the endoscope into the left intrahepatic duct.

**Fig. 4.** White light (A) and narrowband imaging (B) of the stricture in the left hepatic duct.