Initial evaluation of a novel multibending backward-oblique viewing duodenoscope in endoscopic retrograde cholangiopancreatography

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A novel multibending backward-oblique viewing duodenoscope was developed to overcome the difficult technical aspect of deep cannulation into the bile duct during endoscopic retrograde cholangiopancreatography (ERCP). The aim of the present study was to evaluate the initial experience of a novel multibending backward-oblique viewing duodenoscope (M-D scope) for ERCP. This was a retrospective review of 23 patients with native papilla who received biliary ERCP with the M-D scope between April and December 2010. The procedures were performed by two well-experienced endoscopists. In all patients, biliary cannulation and therapeutic procedure were successfully completed. In two patients with Billroth I gastrectomy, ERCP were initially attempted with a conventional single-bending duodenoscope, but biliary cannulations were unsuccessful. However, with the use of the M-D scope, biliary cannulation and therapeutic procedures were successfully completed. A novel multibending backward-oblique viewing duodenoscope is safe and feasible for therapeutic and diagnostic ERCP.

Introduction

Endoscopic retrograde cholangiopancreatography (ERCP) has revolutionized the diagnosis and therapy of biliary and pancreatic diseases. Selective cannulation of the bile duct is essential for interventional procedures such as sphincterotomy, stone removal, biopsy or stent placement. Generally, successful biliary cannulation is achieved by using the up- and downward bending function of the duodenoscope to direct the tip of the catheter towards the axis of the bile duct. Recently, the standard papillotome has been used preferentially over the universal catheter, especially for biliary cannulation, because it allows variable upward angulation of the tip, thus facilitating deep biliary cannulation [1,2]. Patient variables, including location and configuration of the papilla, the presence of periampullary diverticulum, infiltration by tumors, and altered surgical anatomy, sometimes limit and complicate the endoscopic approach to the papilla, such that an en face view of the papilla cannot be obtained, thus hindering cannulation of the bile duct. It has been reported that access to the bile duct may fail in about 5%–15% of cases [3–5]. The precut technique can be applied for cases of difficult cannulation. However procedure-related complications have been reported [1] and, importantly, precut will not be technically possible if a proper view of the papilla cannot be obtained at all.

Recently, a multibending forward-viewing endoscope with two independently bending parts was developed for observation, biopsy, and treatment of sites that are difficult to approach with conventional endoscopes [6,7]. Using the same concept, it was felt that the technical challenge of approaching the papilla for biliary cannulation during ERCP might be overcome by a backward-oblique viewing duodenoscope with multibending function. The present study was therefore a feasibility study that evaluated our initial experience with a novel backward-oblique viewing duodenoscope during biliary ERCP.

Case series

Patients and methods
This study was approved by the institutional review board and informed consent was obtained from all patients. This was a retrospective review of patients with native papilla who received biliary ERCP with a novel multibending backward-oblique viewing duodenoscope (M-D scope, TJF-Y0011; Olympus Medical Systems, Tokyo, Japan) between April and December 2010. During the