Intraductal ultrasonography-directed endoscopic retrograde biliary drainage without fluoroscopy

Common bile duct (CBD) stones may cause septic shock and lead to life-threatening conditions [1]. Endoscopic sphincterotomy (EST) and stone removal is an accepted method for the treatment of CBD stones [2]. EST has the potential to cause bleeding in patients with a bleeding risk. However, endoscopic retrograde biliary drainage (ERBD) can be performed effectively and safely without EST in these patients. ERBD has been performed under fluoroscopy, resulting in a relatively long duration of radiation exposure [3,4]. Intraductal ultrasound (IDUS) provides real-time cross-sectional imaging within the bile duct. IDUS can be performed without fluoroscopy. Therefore, IDUS-directed ERBD can be used to reduce the time of radiation exposure for both examiners and patients. This report describes IDUS-directed ERBD with a plastic stent without fluoroscopy in patients with a risk of bleeding.

A total of nine IDUS-directed ERBD procedures without fluoroscopy were performed. All procedures were performed using a standard side-viewing duodenoscope (TJF-160F; Olympus, Tokyo, Japan). After cannulation with a 0.035-inch guidewire (Jagwire; Boston Scientific, Natick, Massachusetts, United States), the "bile aspiration" technique was used to indicate bile duct cannulation (Fig. 1a) [5]. A 2.0-mm IDUS probe with a frequency of 20-MHz (UM-G20-29R; Olympus) was advanced over the guidewire into the bile duct. After images of ductal anatomy and lesions had been obtained (Fig. 1b), the insertion length of the IDUS probe, from the papilla of Vater to the lesions, was determined. The plastic stent for ERBD was inserted over the guidewire and placed in the correct position after withdrawal of the IDUS probe (Fig. 1c). The location of the ERBD stent was confirmed by plain radiography (Fig. 1d).

Successful intubation of the papilla, selective CBD cannulation, and appropriate ERBD were achieved in all patients (9/9, 100%). No complications were observed in any patient.

References

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Fig. 1 Intraductal ultrasonography (IDUS)-directed endoscopic retrograde biliary drainage (ERBD) without fluoroscopy. a Bile aspiration after biliary cannulation. b IDUS views of a stone in the common bile duct. c Placement of stent for ERBD using IDUS without fluoroscopy. d Plain abdominal radiograph after ERBD insertion.