Peroral cholangioscopy in patients with altered gastrointestinal anatomy is challenging because of the technical difficulties associated with accessing the papilla and the high rate of complications experienced when using a side-viewing duodenoscope [1]. The recently developed SpyGlass Direct Visualization System (Microvasive Endoscopy, Boston Scientific, Natick, Massachusetts, USA) can be passed through a forward-viewing endoscope because its diameter is 10 Fr [2–4].

We describe a case of cholangiocarcinoma that was successfully visualized using a SpyGlass cholangioscope in a patient with a Billroth II gastrectomy.

An 81-year-old man presented to our institution for evaluation of obstructive jaundice. His medical history included a Billroth II gastrectomy for gastric cancer 10 years previously. A front-viewing endoscope was passed through the afferent limb reaching the papilla without difficulty. A cholangiogram showed a severe stricture at the lower end of the bile duct (\textbf{Fig. 1}).

Following endoscopic papillary balloon dilation, a SpyGlass cholangioscope was passed into the bile duct without difficulty (\textbf{Fig. 2}).

Cholangioscopy showed an irregular, fine granular lesion at the upper end of the stricture and normal mucosa at the hilar bile duct (\textbf{Fig. 3}), both of which were biopsied under cholangioscopic imaging using a 3-Fr SpyBite forceps (Boston Scientific; \textbf{Video 1}).

The biopsy specimens taken from the irregular lesion showed adenocarcinoma, whereas those from the hilar bile duct showed no malignancy. He was diagnosed as having a lower bile duct carcinoma without intraepithelial spread of tumor to the hilar bile duct and underwent pan-creatoduodenectomy at our hospital.

Peroral cholangioscopy with mapping biopsies has been shown to be effective for the diagnosis of intraepithelial tumor spread in cholangiocarcinoma [5]. Although SpyGlass cholangioscopy through a colonoscope has been reported in patients with a Roux-en-Y anastomosis [3,4], to our knowledge, this is the first case of bile duct biopsy under direct visualization by SpyGlass cholangioscope in a patient with a Billroth II gastrectomy. In summary, SpyGlass cholangioscopy through a forward-viewing endoscope was very useful for the diagnosis of cholangiocarcinoma in a patient with a Billroth II gastrectomy.

Competing interests: None

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