



Narrow band imaging helps identify the ectopic opening of the common bile duct during endoscopic retrograde cholangiopancreatography

To the Editor,

The ectopic opening of the common bile duct (CBD) into the stomach and pyloric canal is extremely rare, and it accounts for a mere 0.43% of patients undergoing endoscopic retrograde cholangiopancreatography (ERCP) (1); however, when present, it often makes it difficult to recognize the papilla during endoscopy. Here we present a case where narrow band imaging (NBI) was used to discover an ectopic opening of the CBD.

A 56-year-old male who underwent cholecystectomy 6 months prior was referred to our hospital because of a two-week history of abdominal pain, nausea, jaundice, and pruritus. Magnetic resonance cholangiopancreatography (MRCP) showed a hook-shaped CBD and a single stone (Figure 1). Written informed consent was obtained from the patient before ERCP. The major and minor papilla were not found from the slack pylorus to the pars horizontalis duodeni by a duodenoscope and then a gastroscope. The gastroscope was pulled back to the gastric antrum, where a small amount of bile appeared to adhere to the anterior wall. We switched to NBI for performing an examination, which depicts bile as red and blood as black. A bright red fluid was seen discharging from a slit, 3 mm in length, at the 9 o'clock position on the left side of the pylorus (Figure 2). An injection of iopamidol (10 ml) revealed a hook-like dilated CBD (diameter, 13 mm) and one stone measuring 12×6 mm (Figure 3). Balloon dilation (CRE, Boston Scientific, Cork, Ireland) of the biliary orifice to 10 mm was performed, and consequently, the stone was removed by a balloon catheter (Figure 4) without sphincterotomy.

Krstic et al. (2) reported the endoscopic ultrasonography (EUS) diagnosis of an ectopic opening of the CBD in the duodenal bulb before ERCP. However, the echoendoscope tip is very stiff, increasing the chance of an injury to the duodenum. Anjiki et al. (3) reported two cases, where difficulty in recognizing the orifice of the CBD was confirmed by NBI. Apart from ectopic openings of the CBD, unclear orifices of the CBD involve a complex juxtapapillary diverticulum or with the papilla inside a diverticulum (4). We report the first case of

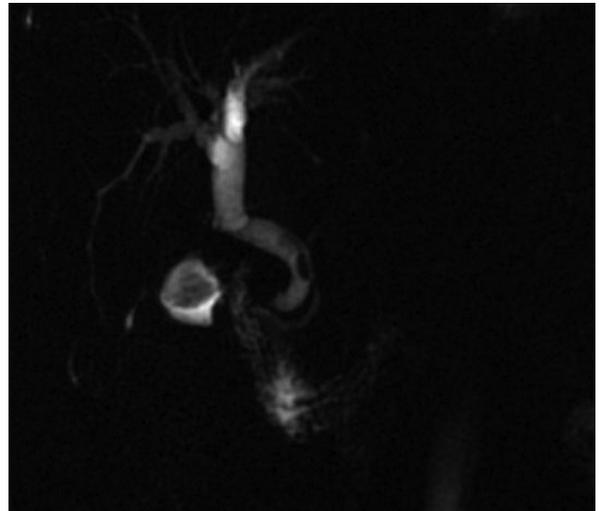


Figure 1. Abdominal MRCP showed a hook-shaped CBD with a stone
MRCP: magnetic resonance cholangiopancreatography; CBD: common bile duct

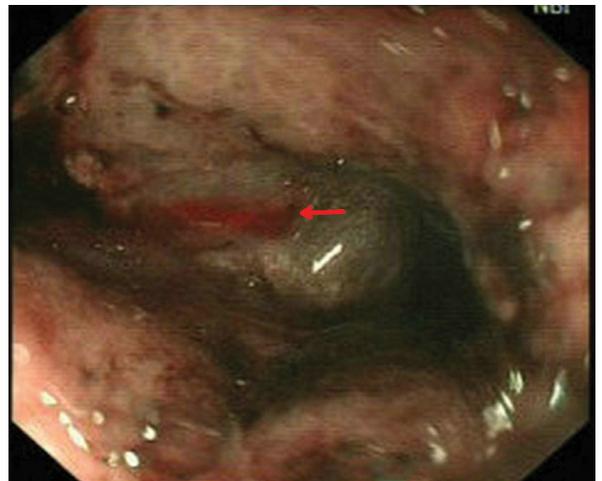


Figure 2. Bright red fluid (red arrow) was observed in the 9 o'clock position on the left side of the pylorus

identifying the ectopic opening of the CBD by NBI followed by successful therapeutic ERCP.

A typical configuration of a small, slit-like orifice, instead of the major duodenal papilla, is usually associated with a hook-shaped CBD and non-functioning sphincter of Oddi (5). If a hook-like deformity of the CBD is encountered on pre-procedure imaging, we advise the use of NBI to help identify the papilla with an understanding

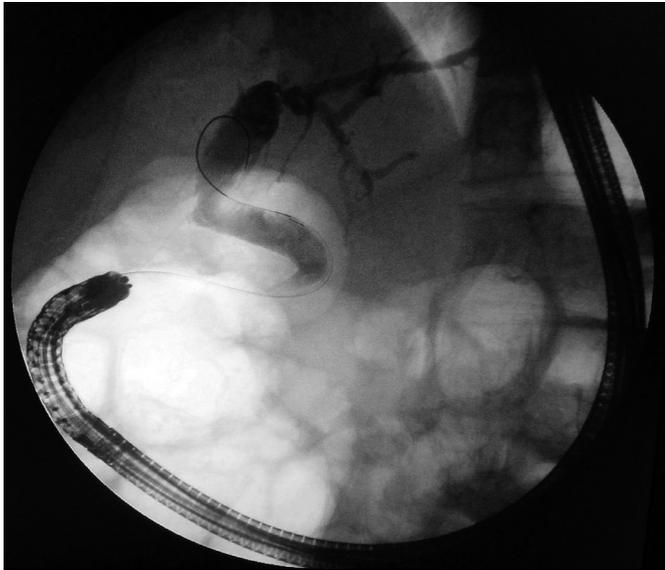


Figure 3. A filling defect (12x6 mm) in the distal CBD
CBD: common bile duct



Figure 4. A small elliptic stone was removed from the bile duct by a balloon catheter

of the anomalous anatomy to avoid unnecessary procedures or risks to patients.

Ethics Committee Approval: N/A.

Informed Consent: Written informed consent was obtained from the patient for using his data in scientific studies while protecting his anonymity before the procedure.

Author Contributions: Concept – W.M., X.L.; Design – W.M., X.L.; Supervision – X.L.; Data Collection and/or Processing – W.M., P.Y., B.B., W.Z.; Analysis and/or Interpretation – W.M., P.Y., B.B., W.Z.; Literature Review – P.Y., B.B.; Writer – W.M., P.Y.; Critical Review – W.Z., X.L.

Acknowledgements: The authors express their gratitude to the three nurses Ms. Qiong Li, Ms. Fangzhao Wang and Mr. Lingen Zhang who have assisted with the procedure and collection of images.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

Wenbo Meng^{1,2}, Ping Yue^{1,2}, Bing Bai^{1,2}, Wence Zhou^{2,3}, Xun Li^{2,3}

¹Special Minimally Invasive Surgery, The First Hospital of Lanzhou University, Lanzhou, China

²Hepatopancreatobiliary Surgery Institute of Gansu Province, Clinical Medical College Cancer Center of Lanzhou University, Lanzhou, China

³The Second General Surgery Department, The First Hospital of Lanzhou University, Lanzhou, China

REFERENCES

1. Uskudar O, Altinbas A, Simsek Z. Endoscopic retrograde cholangiopancreatography with a gastroscope in a case of ectopic opening of common bile duct. *Dig Endosc* 2012; 24: 54. [\[CrossRef\]](#)
2. Krstic M, Stimec B, Krstic R, Ugljesic M, Knezevic S, Jovanovic I. EUS diagnosis of ectopic opening of the common bile duct in the duodenal bulb: a case report. *World J Gastroenterol* 2005; 11: 5068-71. [\[CrossRef\]](#)
3. Anjiki H, Kamisawa T, Egawa N. Utility of narrow band imaging for identification of the orifice of the bile duct during ERCP. *J Hepatobiliary Pancreat Sci* 2010; 17: 365-6. [\[CrossRef\]](#)
4. Li X, Zhu K, Zhang L, et al. Periampullary diverticulum may be an important factor for the occurrence and recurrence of bile duct stones. *World J Surg* 2012; 36: 2666-9. [\[CrossRef\]](#)
5. Ozaslan E, Saritas U, Tatar G, Simsek H. Ectopic drainage of the common bile duct into the duodenal bulb: report of two cases. *Endoscopy* 2003; 35: 545. [\[CrossRef\]](#)

Address for Correspondence: Xun Li

E-mail: drlixun@163.com

Received: October 10, 2016 **Accepted:** October 17, 2016

© Copyright 2017 by The Turkish Society of Gastroenterology •

Available online at www.turkjgastroenterol.org • DOI: 10.5152/tjg.2016.0582