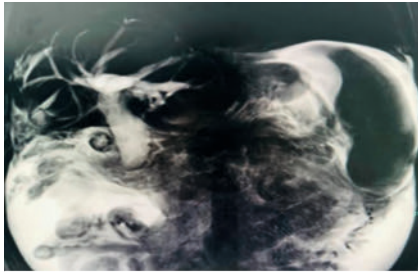
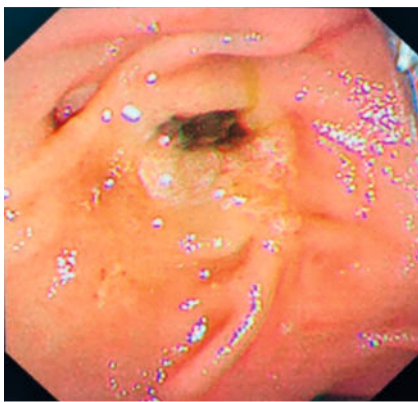


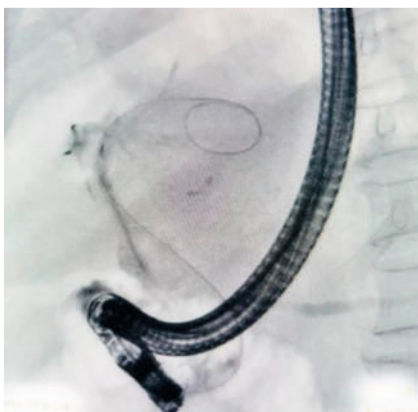
Cholangioscopy-guided laser ablation for intraductal papillary neoplasm of bile duct



► **Fig. 1** Magnetic resonance cholangiopancreatography revealing dilated extrahepatic and intrahepatic biliary systems.



► **Fig. 2** Endoscopic image of fish-mouth deformity of the papilla.



► **Fig. 3** Endoscopic retrograde cholangiopancreatography revealing filling defects due to mucus.

A 65-year-old man with a history of metastatic bladder cancer was admitted with jaundice. Blood tests revealed a cholestatic pattern of liver function, hyperbilirubinemia, and deranged clotting profile. Computed tomography and magnetic resonance cholangiopancreatography showed cirrhosis and dilated extrahepatic and intrahepatic biliary systems without hyperdense stones (► **Fig. 1**). Endoscopic retrograde cholangiopancreatography revealed a fish-mouth deformity of the papillary opening (► **Fig. 2**), dilated intrahepatic ducts, and poor contrast filling of the common bile duct (► **Fig. 3**). Repeated balloon trawling (18 mm) yielded a copious amount of jelly-like mucus. Cholangioscopy (SpyGlass; Boston Scientific, Natick, Massachusetts, United States) revealed multiple foci of papillary growth in the upper common bile duct, common hepatic duct, and proximal left biliary duct (► **Fig. 4**). The biopsy samples revealed papillary proliferation with a gastric subtype and low-grade dysplasia. A diagnosis of intraductal papillary neoplasm of the bile duct (IPNB) was made. Repeat cholangioscopy was performed by introducing an end-on irradiation fiber connected to a laser system (Leonardo 1470 nm/980 nm dual-wavelength laser; CeramOptec GmbH/Biolitec AG, Bonn, Germany) (► **Fig. 5**). Ablation of the papillary growth was performed until a whitish discoloration and necrosis appeared (► **Video 1**). The patient did not experience any discomfort or adverse events after the procedure and was discharged 9 days later.

IPNB is an epithelial tumor characterized by intraductal papillary proliferation and a thin fibrovascular stem on histological analysis [1]. Due to the risk of progression to cancer, surgical resection is recommended. However, surgery was contraindicated for our patient. Furthermore,



► **Fig. 4** Cholangioscopic image revealing papillary growths.



► **Fig. 5** Application of cholangioscopy-guided laser on the papillary growth.



► **Video 1** Cholangioscopy-guided laser ablation of intraductal papillary mucinous neoplasm.

the insertion of a biliary stent does not relieve biliary obstruction due to the viscous nature of the mucus. The use of cholangioscopy-guided laser to dissect benign biliopancreatic ductal strictures [2, 3] and for ablation of cholangiocarcinoma [4] has been reported previously. Our experience suggests that laser has good ablative effects and may be a promising treatment modality for IPNB, particularly for patients who are unfit for surgery.

Endoscopy_UCTN_Code_TTT_1AR_2AF

Funding Information

Key Research and Development Program of Zhejiang Province
<http://dx.doi.org/10.13039/100022963>
No.2023C03054, No.2024C03048

Conflict of Interest

The authors declare that they have no conflict of interest.

The authors

Yuhuan Wu^{1,2}, **Weigang Gu**^{1,2,3,4}, **Ka Shing Cheung**^{5,6}, **Jianfeng Yang**^{1,2,3,4}, **Xiaofeng Zhang**^{1,2,3,4}, **Hangbin Jin**^{1,2,3,4}

- 1 Zhejiang Chinese Medical University The Fourth School of Clinical Medicine, Hangzhou, China
- 2 Gastroenterology, Affiliated Hangzhou First People's Hospital, School of Medicine, Westlake University, Hangzhou, China

- 3 Key Laboratory of Integrated Traditional Chinese and Western Medicine for Biliary and Pancreatic Diseases of Zhejiang Province, Hangzhou, China
- 4 Hangzhou Institute of Digestive Diseases, Hangzhou, China
- 5 Medicine, The University of Hong Kong-Shenzhen Hospital, Shenzhen, China
- 6 Medicine, School of Clinical Medicine, Queen Mary Hospital, The University of Hong Kong, Hong Kong

Corresponding author

Hangbin Jin, MD

Department of Gastroenterology, School of Medicine, Affiliated Hangzhou First People's Hospital, Westlake University, No. 261 Huansha Road, Hangzhou, Zhejiang 310006, China
jhbhzy@163.com

References

- [1] Sakai Y, Ohtsuka M, Sugiyama H et al. Current status of diagnosis and therapy for intraductal papillary neoplasm of the bile duct. *World J Gastroenterol* 2021; 27: 1569–1577. doi:10.3748/wjg.v27.i15.1569
- [2] Mittal C, Shah RJ. Pancreatotomy-guided laser dissection and ablation for treatment of benign and neoplastic pancreatic disorders: an initial report (with videos). *Gastrointest Endosc* 2019; 89: 384–389. doi:10.1016/j.gie.2018.08.045
- [3] Han S, Shah RJ. Cholangiopancreatotomy-guided laser dissection and ablation for pancreas and biliary strictures and neoplasia. *Endosc Int Open* 2020; 8: E1091–E1096. doi:10.1055/a-1192-4082
- [4] Xia M, Hu X, Zhang T et al. Laser ablation under intraductal cholangioscopic guidance for cholangiocarcinoma. *Endoscopy* 2023; 55: E590–E591. doi:10.1055/a-2051-7984

Bibliography

Endoscopy 2024; 56: E636–E637

DOI 10.1055/a-2357-2408

ISSN 0013-726X

© 2024. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution License, permitting unrestricted use, distribution, and reproduction so long as the original work is properly cited.

(<https://creativecommons.org/licenses/by/4.0/>)

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany



ENDOSCOPY E-VIDEOS

<https://eref.thieme.de/e-videos>



E-Videos is an open access online section of the journal *Endoscopy*, reporting on interesting cases

and new techniques in gastroenterological endoscopy. All papers include a high-quality video and are published with a Creative Commons CC-BY license. Endoscopy E-Videos qualify for HINARI discounts and waivers and eligibility is automatically checked during the submission process. We grant 100% waivers to articles whose corresponding authors are based in Group A countries and 50% waivers to those who are based in Group B countries as classified by Research4Life (see: <https://www.research4life.org/access/eligibility/>).

This section has its own submission website at <https://mc.manuscriptcentral.com/e-videos>