

Technical aspects of transpapillary biopsy for gallbladder cancer using a novel cholangioscope

OPEN
ACCESS



► **Fig. 1** Novel cholangioscope (eyeMAX, Micro-Tech, China) with an extremely tapered tip.



► **Fig. 2** Cholangiography showing a filling defect with a characteristic appearance of a tumor.



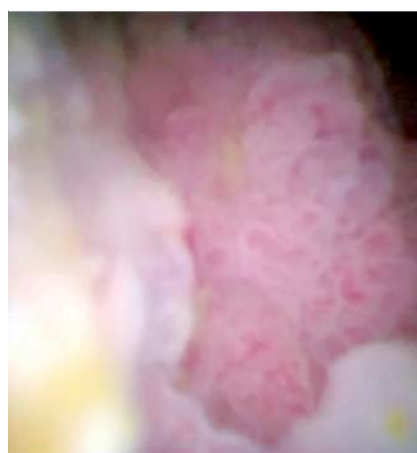
► **Fig. 3** Visualization of the gallbladder from the novel cholangioscope.

Cytology of bile juice obtained under endoscopic retrograde cholangiopancreatography (ERCP) guidance is the gold standard technique for obtaining histopathological evidence of gallbladder cancer. However, the diagnostic yield of this technique is insufficient. Endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) has recently been performed for gallbladder lesions. However, because the gallbladder has a lumen, inadequate EUS-FNA can lead to bile leakage or cancer cell dissemination [1, 2]. Therefore, it is sometimes difficult to obtain histological tissue samples from gallbladder tumors. Although transpapillary gallbladder tumor biopsy under cholangioscopy guidance may be useful, the insertion of a cholangioscope into the gallbladder through the cystic duct is challenging. The recent introduction of a novel tapered cholangioscope (eyeMAX, Micro-Tech, China) may address these challenges (► **Fig. 1**). The tip of this scope is significantly tapered, facilitating its smooth insertion into the target site. In addition, the scope features a working channel of 1.8 mm and a dedicated biopsy forceps,

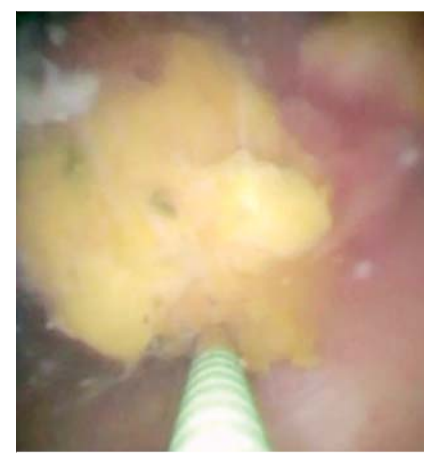
with a cup length of 1.6 mm, which enables the retrieval of large quantities of histological tissue. Herein we describe the technical aspects of the use of this scope for performing transpapillary biopsy of gallbladder cancer.

First, following successful biliary cannulation, an ERCP catheter was inserted into the cystic duct. Then, contrast medium was injected and cholangiography was performed, revealing a filling defect with the appearance of a gallbladder tumor (► **Fig. 2**). Then, a guide-wire was successfully inserted in the gallbladder, followed by the insertion of the novel cholangioscope into the gallbladder (► **Fig. 3**). Once the gallbladder tumor was visualized (► **Fig. 4**), forceps biopsy was performed without any adverse events (► **Fig. 5**, ► **Video 1**). Histological analysis of the biopsy specimen identified the mass as adenocarcinoma. Following surgical resection, the patient's diagnosis was confirmed as gallbladder cancer.

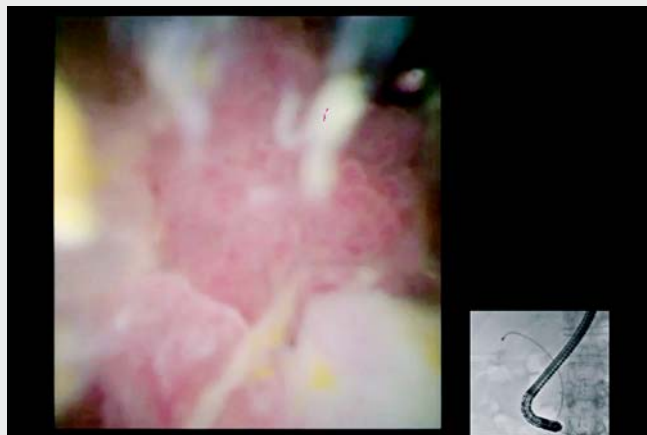
In conclusion, the tapered shape of the novel eyeMAX cholangioscope makes it a viable option for performing trans-



► **Fig. 4** Identification of the gallbladder tumor on cholangioscopy.



► **Fig. 5** Tumor biopsy was performed successfully.



Video 1 Forceps biopsy of a gallbladder tumor performed under cholangioscopy guidance using a novel cholangioscope.

papillary biopsy to obtain a histological diagnosis of gallbladder lesions.

Endoscopy_UCTN_Code_TTT_1AR_2AD

Competing interests

The authors declare that they have no conflict of interest.

The authors

Takeshi Ogura^{1,2}, Kimi Bessho², Nobuhiro Hattori², Mitsuki Tomita², Hiroki Nishikawa²

- 1 Endoscopy Center, Osaka Medical and Pharmaceutical University Hospital, Osaka, Japan
- 2 Second Department of Internal Medicine, Osaka Medical and Pharmaceutical University Hospital, Osaka, Japan

Corresponding author

Takeshi Ogura, MD, PhD

Endoscopy Center, Osaka Medical College,
2-7 Daigakuchou, Takatsukishi, Osaka 569-
8686, Japan
Fax: +81-726846532
oguratakeshi0411@yahoo.co.jp

References

- [1] Koimtzis GD, Chalklin CG, Carrington-Windoe E et al. The role of fine needle aspiration cytology in the diagnosis of gallbladder cancer: a systematic review. *Diagnostics (Basel)* 2021; 11: 1427
- [2] Kundu R, Rana SS, Suneel R et al. EUS-guided FNAC in intra-abdominal lesions: technique of tissue acquisition, ancillary testing, pearls and perils, and prospects. *Diagn Cytopathol* 2023; 51: 455–464

Bibliography

Endoscopy 2023; 55: E1085–E1086

DOI 10.1055/a-2173-7893

ISSN 0013-726X

© 2023. 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>