Endoscopic cutting-wave biopsy for submucosal tumors smaller than 20 mm

► **Fig. 1** Endoscopic cutting-wave biopsy for submucosal tumors. The tumor is exposed and biopsy performed using hot biopsy forceps and cutting waves.

► **Fig. 2** The resected specimen has suffered no heat denaturation, and immunogenicity is maintained.

► **Fig. 3** At endoscopic follow-up the following year, the wound is seen to be tightly closed.

► **Video 1** Endoscopic cutting-wave biopsy for submucosal tumors performed on a 15-mm submucosal tumor. The patient was discharged the next day without any complications such as bleeding or perforation. The pathological result revealed leiomyoma.

Endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) is widely used for pathological diagnosis of submucosal tumors; however, no diagnostic method has become established for small lesions (≤ 20 mm) [1]. Boring biopsies have been performed for a long time, but when the tumor is small and hard, the forceps often slip and sufficient tissue cannot be collected. We devised a method called endoscopic cutting-wave biopsy for submucosal tumors (E-CWBS), which resects a portion of a tumor using hot biopsy forceps and cutting waves. We report here the results of E-CWBS followed by pathological examination in 15 cases of upper gastrointestinal submucosal tumor measuring less than 20 mm (► **Fig. 1**; ► **Video 1**). Using our method, we first removed the mucosa and connective tissue using forceps and cutting waves to completely expose the tumor body. Next, the tumor was visually confirmed directly, firmly grasped by slightly pushing the biopsy forceps, and the cutting wave was energized to perform partial excision of the

tumor. To control bleeding, hemostasis was performed using forceps and coagulation waves, and after surgery the mucosal defect was closed with several endoscopic clips.

The pathological diagnosis rate resulting from these biopsies was eight out of ten in tumors sized between 10 mm and 20 mm and (equivalently) four out of five in tumors smaller than 10 mm (► **Fig. 2**). This diagnosis rate is higher than that associated with the conventional method EUS-FNA [2, 3]. In three cases, the tumors could not be diagnosed because of heat denaturation; therefore, it was considered necessary to shorten the energization time to the extent possible. No complications such as postoperative bleeding, perforation, or infection were observed in any case (► **Fig. 3**).

E-CWBS for submucosal tumors smaller than 20 mm in size is considered a safe and useful tool for collection of sufficient tissue.

Endoscopy_UCTN_Code_TTT_1AO_2AC

Competing interests

The authors declare that they have no conflict of interest.

The authors

Shintaro Tominaga, Makoto Kobayashi, Akihiro Maruyama, Motoyoshi Yano
Department of Gastroenterology, Yokkaichi Municipal Hospital, Mie, Japan

Corresponding author

Shintaro Tominaga, MD
2-2-37, Shibata, Yokkaichi-shi, Mie,
Yokkaichi 510-8567, Japan
tomitaro21@gmail.com

References

- [1] Casali PG, Abecassis N, Bauer S et al. Gastrointestinal stromal tumours: ESMO-EURACAN clinical practice guidelines for diagnosis, treatment and follow-up. *Ann Oncol* 2018; 29: iv68–iv78
- [2] Akahoshi K, Sumida Y, Matsui N et al. Pre-operative diagnosis of gastrointestinal stromal tumor by endoscopic ultrasound-guided fine needle aspiration. *World J Gastroenterol* 2007; 13: 2077–2082
- [3] Hoda KM, Rodriguez SA, Faigel DO. EUS-guided sampling of suspected GI stromal tumors. *Gastrointest Endosc* 2009; 69: 1218–1223

Bibliography

Endoscopy 2022; 54: E439–E440
DOI 10.1055/a-1625-2382
ISSN 0013-726X
published online 17.9.2021
© 2021. Thieme. All rights reserved.
Georg Thieme Verlag KG, Rüdigerstraße 14,
70469 Stuttgart, Germany

ENDOSCOPY E-VIDEOS

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

Endoscopy E-Videos is an open access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online. Processing charges apply (currently EUR 375), discounts and waivers acc. to HINARI are available.

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