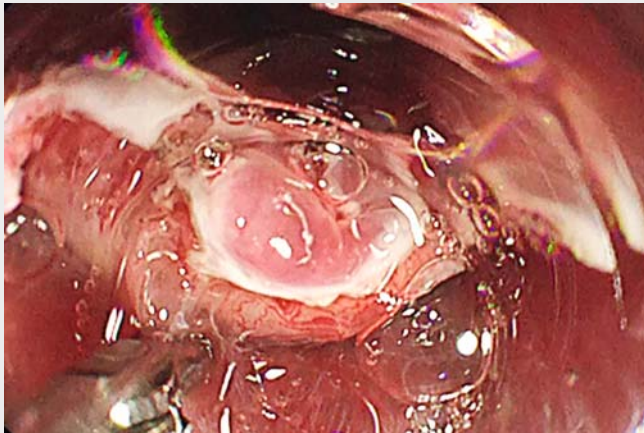


## Safe and economical use of hemostatic forceps for dissecting fibrosis or vessels during endoscopic submucosal dissection ▶

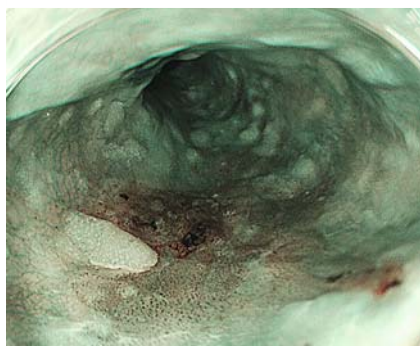
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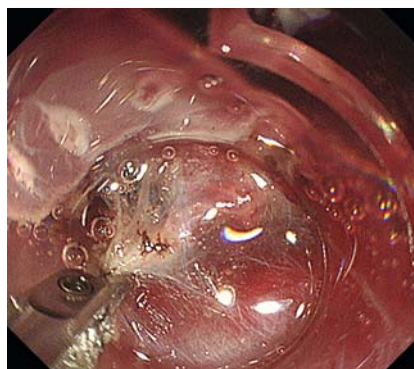
▶ **Video 1** New application of HF using incisional mode is cost-effective and useful for completing ESD easily and safely.



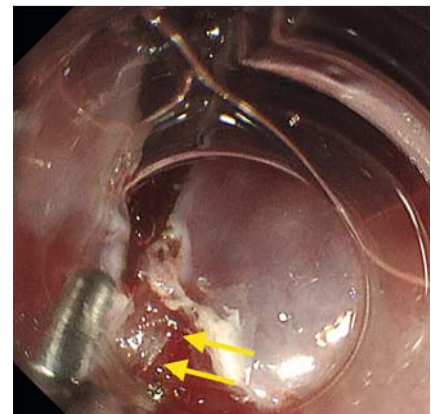
▶ **Fig. 3** Endoscopic view showing the vessel (green arrow) dissected without any bleeding using HF with Endocut mode.



▶ **Fig. 1** Endoscopic view of an early esophageal carcinoma (25×20 mm in diameter) in the middle esophagus.



▶ **Fig. 2** Large vessel in the submucosa coagulated using hemostatic forceps (HF) with soft coagulation.



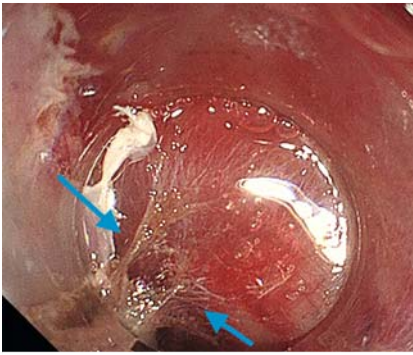
▶ **Fig. 4** Endoscopic view showing safe cutting by HF of submucosa (yellow arrows) facing the muscle layer.

Endoscopic submucosal dissection (ESD) is a well-established therapeutic strategy for resecting early gastrointestinal neoplasms[1–3]. However, operators sometimes encounter difficult situations during ESD, resulting in longer procedure times and an increasing complication rate. The more complicated situations involve encountering the muscularis propria (MP) and submucosal fibrosis, managing large or rich vessels, and resecting the endpoint. In these situations, a device such as a scissors type of knife

[4] is sometimes introduced. However, use of a scissors type device in addition to a needle knife becomes uneconomical. Here we describe an effective incision using HF for overcoming the aforementioned difficulties in esophageal ESD (▶ **Video 1**).

In this case, we used ESD for early esophageal carcinoma (▶ **Fig. 1**). While proceeding with standard ESD, we noted submucosal fibrosis and large vessels. The vessels were coagulated using HF (Coagrasper, FD-411UR; Olympus, To-

kyo, Japan) (▶ **Fig. 2**) with soft coagulation (effect 4, 30W) of the electric generator (VIO300D; ERBE, Tübingen, Germany), followed by dissection of the vessel and fibrosis using HF with the Endocut mode (effect 1, duration 2) (▶ **Fig. 3**). This series of techniques led to a shortening of the procedure time. The HF was also effective in safe submucosal dissection when encountering the MP layer, which is at risk for perforation (▶ **Fig. 4**). Our technique of using HF at the challen-



► **Fig. 5** Endoscopic view showing effective resection by HF of the endpoint (blue arrows).

ging endpoint of ESD, in which the dissection is sometimes difficult due to the flexible movement of the resected lesion, can decrease the likelihood that the dissection will be difficult (► **Fig. 5**). Finally, esophageal ESD was achieved without complications with the help of the incisional function of HF.

We suggest that our novel application of HF using the incisional mode is a useful and economical option for completing ESD easily and safely.

## Competing interests

The authors declare that they have no conflict of interest.

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