Endoscopic submucosal dissection (ESD) of the duodenum is technically challenging, with a high risk of intraoperative perforation and delayed adverse events [1]. Valuable methods, such as the water pressure [2] and traction-assisted methods [3] have been reported. The Dual-Knife retracts with 0.1 mm left outside the sheath (▶Fig.1). This feature is useful for marking and hemostasis [4]. There is a risk of perforation when the submucosal layer is dissected using a knife facing the muscle layer. We report that safe and effective dissection was possible with the retracted DualKnife and traction assistance.

A 71-year-old man presented with a 20-mm type 0-IIc duodenal adenocarcinoma in the second portion of the duodenum (▶Fig.2). ESD was performed using a therapeutic endoscope (GIF-H290T; Olympus, Tokyo, Japan) and 1.5-mm DualKnife J (KD-655L; Olympus) under general anesthesia (▶Video. 1). A short, small-caliber-tip transparent hood (DH-28GR; Fujifilm, Tokyo, Japan) was used. Mucosal incision was made using the underwater and conventional methods. Dissection was performed underwater, with the water pressure method as appropriate. After the full-circumference incision and flap were made, traction toward the opposite side was created with a multi-loop traction device (Boston Scientific, Marlborough, Massachusetts, United States). When the knife faced the muscle layer or the scope was unstable, the submucosa was dissected with a retracted knife (▶Fig.3). The submucosa can be effectively dissected with a light touch of the retracted knife under proper traction. The risk of intraoperative perforation is reduced because the knife does not penetrate the muscle layer. However, there is a risk of muscle layer coagulation if the knife is pressed hard against the submucosa. En bloc resection was achieved without perforation (▶Fig.4), and the ulcer was closed entirely with clips to prevent delayed perforation. We demonstrated a safe duodenal ESD with a retracted needle knife.

[▶Fig.1] Comparison of the tip of the DualKnife J in extended and retracted conditions. When the tip of the knife is retracted, 0.1 mm of the tip remains outside the sheath (arrow).

[▶Fig.2] White light image of the lesion. A 20-mm type 0-IIc duodenal cancer was located at the second portion of the duodenum. The pathological analysis confirmed well-differentiated tubular adenocarcinoma, pTis, Ly0, V0, HM0, VM0.

[▶Video 1] Duodenal endoscopic submucosal dissection with a retracted needle knife.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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