Gastric endoscopic submucosal dissection using the “pulley clip with elastic line” method

Visibility of the submucosa is important for safe and quick gastric endoscopic submucosal dissection (ESD) [1–4]. Thus, we have developed a new efficient traction method called the “pulley clip with elastic line” method (PEM).

A commercially available elastic line (elastic synthetic fiber with a diameter of 0.5 mm), hemostatic clip (HX-610-090S/HX-610-090L; Olympus, Tokyo, Japan), and hemoclip applicator device (HX-110QR; Olympus) are used (Video 1).

First, an incision is made around the lesion, as in normal ESD. The normal mucosal border and direction in which the lesion is to be pulled are determined, and a clip is attached to the contralateral normal gastric mucosa (Video 1a). The endoscope is withdrawn. Then, a hemoclip applicator device is inserted into the accessory channel of the endoscope, and a hemoclip is mounted onto the tip of the clip device. A length of elastic line is tied directly to the stainless steel ribbon of the clip so that the elastic line clip assembly is contained in the channel of the scope. After reinsertion of the scope into the stomach, a clip is attached to a suitable site on the lesion for oral or anal traction (Video 1b). When a clip-on-clip attachment is performed, as shown in Video 1, the middle clip plays the role of a pulley, and the lesion can be pulled continuously.

Video 1 The “pulley clip with elastic line” method and its use in gastric endoscopic submucosal dissection.
can be pulled continuously (Fig. 1c, Fig. 2, Fig. 3). Furthermore, use of an elastic line prevents the lesion from being torn due to excessive traction.

Video 1 shows an example of gastric ESD using PEM. When PEM is performed, visualization of the submucosal layer is continuous and finding a hemostasis point becomes easy. In addition, the visual field can be obtained in the forward and retroflex positions. The lesions were completely removed with free margins.

In summary, “PEM” is useful for performing gastric ESD safely and easily.

Competing interests

None

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