Two-point fixed pulley-traction method in endoscopic submucosal dissection for early gastric neoplasm

Endoscopic submucosal dissection (ESD) is a technically challenging procedure with substantial risk of intraoperative complications. Traction assistance is a promising strategy for simplifying ESD. Although multiple traction methods have been proposed [1–5], there is room for further optimization. We designed a novel traction method termed the two-point fixed pulley-traction method (TPPT), which is detailed below and illustrated in Video 1.

We implemented TPPT during ESD in an 80-year-old man with an early gastric neoplasm. The lesion measured 10 mm and was located on the lesser curvature of the gastric body. A viscous solution was injected into the submucosal layer and a circumferential mucosal incision was made around the lesion (▶ Fig. 1a). TPPT was implemented as follows. First, a clip hooking a small base ring of silicon bands was placed on one side of the lesion (▶ Fig. 1b). A thread had been pre-tied to the central ring of the silicon bands (▶ Fig. 2). Second, another clip, hooking the distal ring, was placed on the other side of the mucosal flap (▶ Fig. 1c). Finally, a
third clip hooking the thread was placed on the greater curvature, opposite the lesser curvature bearing the lesion. TPPT was finalized by pulling the thread (▶Fig.1d). TPPT applied a stable vertical traction force to the target lesion, enhancing the visibility of the submucosal layer until the completion of submucosal dissection. Consequently, en bloc resection was performed efficiently without complications.

TPPT is a traction method that combines a two-point traction strategy with a pulley system. The entire mucosal flap could be elevated by applying traction at two points. Additionally, a vertical traction force was obtained via the pulley system, offering optimal traction. Therefore, TPPT could potentially serve as a useful tool for assisting ESD procedures for early gastric neoplasms.

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References

Competing interests
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