

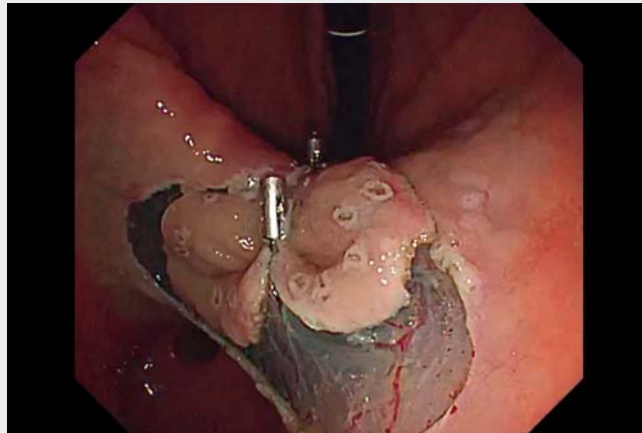
A novel countertraction-assisted technique facilitating endoscopic submucosal dissection of early gastric angle cancer without the use of a transparent hood

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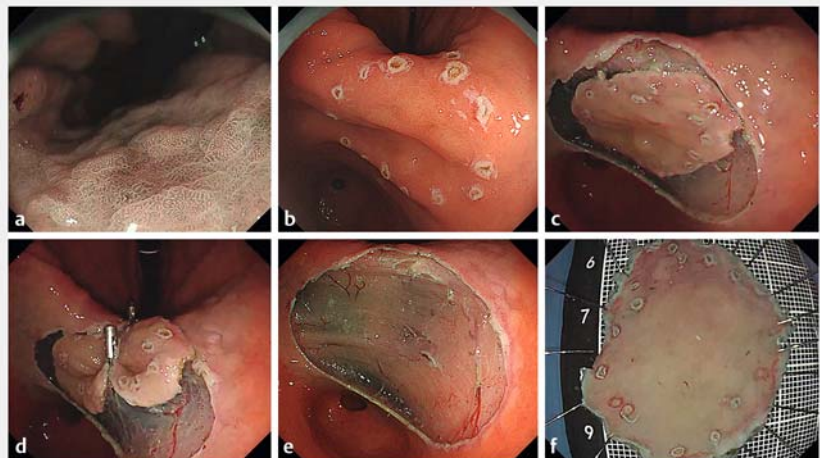
The adoption of the transparent hood as an invisible assistant has promoted the technique of endoscopic submucosal dissection (ESD) and put it on the fast track to widespread use. However, the transparent hood may sacrifice part of the surgical view and often contributes to blurred visibility through the accumulation of dirty fluid and fogging. We have developed a countertraction-assisted technique for gastric ESD that is independent of the transparent hood (▶ **Video 1**).

An 82-year-old woman was diagnosed with early cancer of the gastric angle, consisting of an obvious irregular microvascular pattern confirmed by magnification endoscopy (▶ **Fig. 1 a**), and was referred for routine ESD. The borders of the lesion were marked (▶ **Fig. 1 b**), after which a circumferential mucosal incision was performed without the use of a transparent hood (▶ **Fig. 1 c**). Since the stomach was extremely folded vertically and the gastric angle and lesser curvature were inaccessible to the endoscope, further dissection was hampered by inadequate exposure of the submucosal layer. A countertraction device was therefore applied to facilitate the submucosal dissection. To do this, a clip with a rubber band was anchored to the anal side of the incised lesion, and another clip was used to fix the rubber band to the oral gastric wall in the lesser curvature. Thanks to the countertraction-assisted force, the submucosal layer was clearly presented (▶ **Fig. 1 d**), and the lesion was efficiently and safely dissected under satisfying full-scale view without a transparent hood (▶ **Fig. 1 e**; ▶ **Video 1**). At the end of the procedure, the resected lesion with the countertraction device still attached was easily extracted using foreign body forceps and was gently affixed to a foam board (▶ **Fig. 1 f**).

Various traction techniques have been introduced to facilitate ESD in the stom-



▶ **Video 1** Endoscopic submucosal dissection assisted by a novel clip-with-rubber-band countertraction technique, without using a transparent hood, in a patient with early cancer of the gastric angle.



▶ **Fig. 1** Innovative countertraction without a transparent hood facilitated a difficult endoscopic submucosal dissection (ESD) in the gastric angle. **a** Early gastric angle cancer consisting of obvious irregular microvascular pattern was confirmed by magnifying endoscopy. **b** The borders of the early cancerous lesion in the gastric angle were evenly marked. **c** The circumferential mucosal incision was performed in the normal way at the target location without using a transparent hood. **d** The countertraction device, consisting of two clips and a rubber band, exposed the submucosal layer well and provided full-scale surgical view without a transparent hood. **e** The ESD was completed evenly and efficiently, leaving a beautiful surgical wound without injury from the electrical current. **f** The resected specimen was fixed on a foam board with all of the marking dots displayed.

ach, including the EndoTrac [1], spring-and-loop with clip [2], clip-and-snare [3], elastic traction device [4], and clip-with-line [5]. Unlike the above traction methods, which are combined with a transparent hood, we have demonstrated in this case that inner countertraction is itself able to provide the surgical space required. This novel ESD technique simplifies the operating technique and offers a panoramic surgical view by abandoning the transparent hood.

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Competing interests

The authors declare that they have no conflict of interest.

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