Pocket-creation method using a new technique of single-clip traction for colorectal endoscopic submucosal dissection

Colorectal endoscopic submucosal dissection (ESD) is a challenging procedure used in the removal of colorectal neoplasms and various methods have been developed to improve its performance [1–3]. Among these, the pocket-creation method (PCM) allows the safe and efficient removal of neoplastic lesions, using precise submucosal dissection just above the muscularis propria [4, 5]. However, the pocket-opening phase of PCM is often cumbersome and time-consuming. We have invented a new technique using single-clip traction that we have called PCM with clip traction (PCM-CT), which we believe improves the speed and safety of the pocket-opening phase. PCM-CT creates submucosal traction by using a single hemoclip to affix normal mucosa from the distal side of the lesion to normal mucosa on the opposite colonic wall (▶Fig. 1). This elongates the submucosa, enabling clearer identification of the safest submucosal dissection line.

A 20-mm, Paris IIa, nongranular, JNET 2B, laterally spreading lesion in the proximal ascending colon (diagnosed on pathology as being a well differentiated slightly invasive submucosal adenocarcinoma with a 400-µm invasion depth, negative lymphovascular invasion, and negative margins) was removed using the PCM-CT (▶Fig. 2; ▶Video 1). As per the standard PCM, a submucosal pocket was first created below the lesion. Next, a circumferential mucosal incision was performed approximately 7 mm outside the margin.

▶Fig. 1 Illustration of the pocket-creation method with clip traction (PCM-CT). a–c The submucosa below the lesion is dissected using the PCM; d a circumferential mucosal incision is created around the lesion; e, f a reopensable hemoclip is used to grasp normal mucosa on the distal edge of the partially resected lesion, without deployment; g the entrapped mucosa is pulled towards the normal mucosa on the opposite intestinal wall; h the hemoclip is slowly reopened to capture the opposing normal mucosa and the clip is deployed; i the remaining submucosa below the lesion is dissected with reliable identification of the safest submucosal dissection line.
of the lesion. A reopenable hemoclip (SureClip; Micro-Tech Co. Ltd., NanJing, China) was used to grasp normal mucosa on the distal edge of the partially resected lesion, without being deployed. The resulting entrapped mucosa was then pulled towards the opposite colonic wall, where the hemoclip was carefully reopened to capture the opposing normal colonic mucosa. Once it was confirmed that both mucosal sites had been secured, the hemoclip was deployed. The remaining submucosa beneath the lesion was then dissected and the lesion was safely removed.

In conclusion, PCM-CT provides continuous submucosal traction on lesions by stretching the submucosa and allowing clearer identification of the safest submucosal resection path. This technique facilitates the pocket-opening stage of PCM and potentially improves its safety and efficiency.

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Competing interests

H. Yamamoto has a patent for ESD devices produced by the Fujifilm Corporation. He also has a consultant relationship with the Fujifilm Corporation and has received honoraria, grants, and royalties from the company.