Article published online: 2022-08-25

Different methods of traction employed during endoscopic submucosal dissection of early cancers

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Endoscopic submucosal dissection (ESD) is an accepted technique for en bloc excision of gastrointestinal neoplasia. One of the main challenges during ESD is lack of traction to open the submucosal plane for dissection and to avoid muscle injury. ▶ **Video 1** demonstrates various traction techniques available to aid submucosal dissection. The techniques shown are: water traction, clip and rubber band, clip and line, and the ProdiGI traction device (Medtronic).

Water traction For a colonic lateral spreading tumor (LST) in a patient with colitis, water-jet assisted traction was used to maintain adequate visualization of the submucosal planes, which can be challenging in colitis due to fibrosis and adipose tissue.

Clip and rubber band In the case of a colonic granular LST, after circumferential incision and creation of an adequate mucosal flap, a clip preloaded with a small dental rubber band was deployed, capturing the cut mucosal flap. A second clip was then used to tether the flap to the opposite colonic wall to open the submucosal space.

Clip and line In treating an esophageal squamous cell carcinoma, once the proximal side of the lesion was dissected and a pocket is created, the scope was removed from the patient. A clip was then inserted into the working channel, dental floss tied around the open clip, and the clip gently closed with the dental floss remaining outside. The endoscope was then reinserted into the patient with the preloaded clip, which was used to grasp the mucosal flap and deployed. Traction was applied by gently pulling the dental floss outside the patient.

ProdiGI traction device For dissection of an early gastric cancer saddling the pyloric rim, a purpose-built traction device using a through-the-scope clip with a preloaded wire was used to grasp the cut mucosal flap. A second clip was then used to grasp the wire and attach it to the opposite gastric wall. This provided traction and prevented migration of the lesion into the duodenum during resection.

Video 1 Traction techniques available to aid submucosal dissection. Water traction, clip and rubber band, clip and line, and the ProdiGI traction device are demonstrated.

Endoscopy_UCTN_Code_TTT_1AQ_2AC

Competing interests

The authors declare that they have no conflict of interest.

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Endoscopy 2022; 54: E1057
DOI 10.1055/a-1884-8888
ISSN 0013-726X
published online 25.8.2022

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany