



# Magnetic anchor-guided endoscopic submucosal dissection of rectal submucosal tumor in difficult location

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Received: 29 March 2020 / Accepted: 8 April 2020 / Published online: 18 April 2020  
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Colorectal endoscopic submucosal dissection (ESD) is a difficult endoscopic technique. A thin intestinal muscle layer, poor endoscopic operability and submucosal visual field insufficiency will all increase the risk of complications [1, 2]. Magnetic anchor guided ESD (MAG-ESD) provides adequate direction and degrees of traction in various locations, which effectively improves the surgical field of vision [3, 4].

A 50-year-old woman was admitted to the hospital after discovery of a submucosal mass in her rectum. After a thorough evaluation of the lesion, we decided to perform an ESD procedure. The procedure is shown in the attached video.

Endoscopic ultrasonography (EUS) revealed that the lesion was a low echo mass originating from the muscularis mucosa. The lesion could not be exposed under direct vision. It was necessary to reverse the endoscope to fully reveal the lesion. Transanal resection could not be performed because the lesion was located at the cephalad side of the rectal semilunar valve and close to the edge of the fold. We attached the internal neodymium magnet to the hemoclip to form a magnetic anchor and deployed the magnetic anchor to the mucosal edge of the lesion. By adjusting the position of the external neodymium magnet to control the traction, we stably exposed the mucosa of the anal side of the lesion and made an incision. We successfully performed ESD and the lesion was dissected en bloc. There were no complications. Histological examination showed highly differentiated neuroendocrine tumor (NET: G1 grade). The tumor was positive for CK8/18 and SYN. The vertical and horizontal margins of the tumor were negative.

We believe that magnetic anchor guidance can play an important role in ESD, especially in difficult locations.

**Funding** This video was not funded by any company.

## Compliance with ethical standards

**Conflict of interest** No conflict of interest exists in the submission of this manuscript, and manuscript is approved by all authors for publication.

**Ethical approval** All human studies have been reviewed by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in an appropriate version of the 1965 Declaration of Helsinki.

**Informed consent** Informed consent was obtained from all individual participants included in the study.

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