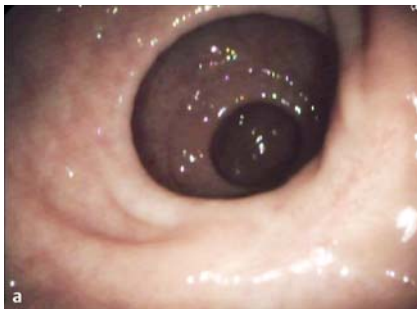


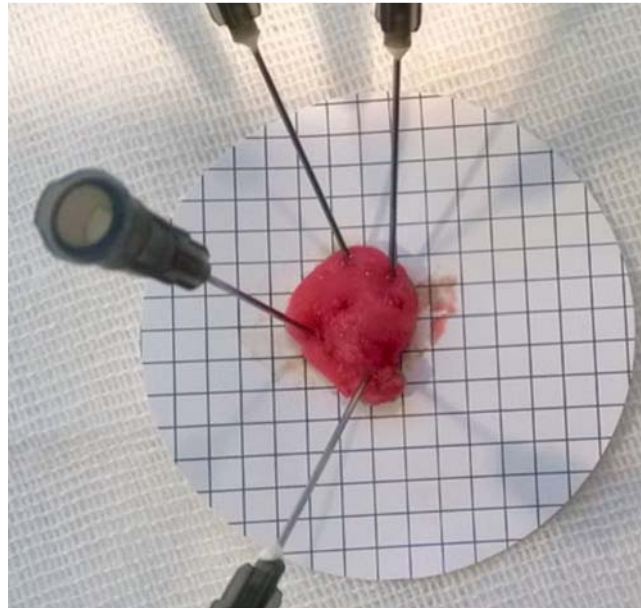
## Over-the-scope clip-assisted endoscopic full-thickness resection after incomplete resection of rectal adenocarcinoma



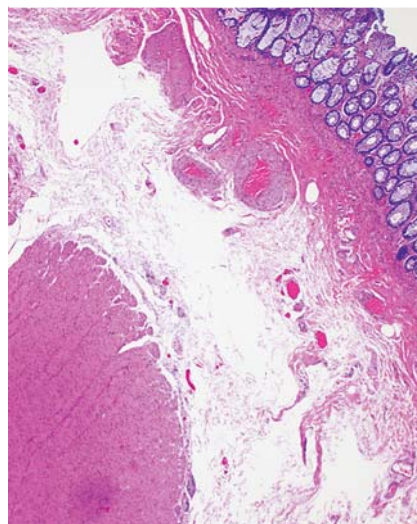
**Fig. 1** Endoscopic view showing the 3-cm non-pedunculated rectal polyp



**Fig. 2** Endoscopic views 3 months after the first endoscopic mucosal resection showing: **a** the scarred resection site (approximately 15 mm); **b** the immediate appearance after the full-thickness resection, with the over-the-scope-clip (OTSC) completely sealing the rectal wall defect.



**Fig. 3** Photograph of the rectal full-wall resection specimen (luminal view).



**Fig. 4** Histopathological specimen of full-wall resection showing all the layers of the gut, with no dysplastic or neoplastic tissue.



**Fig. 5** Endoscopic view showing the scarred resection site 3 months after the full-thickness resection.

Endoscopic resection is a valuable therapeutic option for early colorectal cancer (CRC), especially in high risk surgical patients [1]. A novel endoscopic full-thickness resection device (FTRD; Ovesco Endoscopy, Tübingen, Germany) has been developed recently to achieve complete endoscopic resection of early CRC [2, 3].

Here, we report the case of a 78-year-old man with a history of coronary artery disease and recent pulmonary embolism being treated with anticoagulant therapy who underwent colonoscopy for hematochezia. A 3-cm non-pedunculated colorectal polyp with with Kudo V pit pattern was observed 5 cm above the dentate line

(**Fig. 1**). An en bloc endoscopic mucosal resection was performed. Histology revealed adenocarcinoma (pT1 G2 Sm3) with a positive resection margin (0.7 mm) and deep submucosal invasion (1.4 mm). Total body computed tomography (CT) and rectal endoscopic ultrasound (EUS) showed no lymphatic or metastatic disease.

Because of the patient's comorbidities, we used the FTRD to achieve an R0 resection (**Video 1**) after he had received antibiotic prophylaxis with an intravenous cephalosporin. The last dose of low-mole-

## Video 1



The full-thickness resection device (FTRD) is shown being used to achieve an R0 resection in the rectum: the lateral margins are marked with argon plasma coagulation (APC) and a modified 14-mm over-the-scope clip (OTSC) is deployed to create a pseudopolyp that is resected using the preloaded snare and a standard electrosurgical setting.

cular-weight heparin was administered 12 hours before the procedure. The lateral margins of the scarred resection site (● Fig. 2a) were marked with argon plasma coagulation (APC). The FTRD was mounted on the tip of an operative gastroscope and, through a tissue anchor, the whole scarred lesion was pulled into the cap and a modified 14-mm over-the-scope clip (OTSC) was deployed. The pseudopolyp created by the OTSC was resected using the preloaded snare and a standard electrosurgical setting (VIO; ERBE Elektromedizin GmbH, Tübingen, Germany) (● Fig. 2b). The procedure took about 8 minutes and there were no complications. Low-molecular-weight heparin was re-introduced 24 hours after the procedure and the patient was discharged. The full-thickness specimen 15 mm in size (● Fig. 3) was subjected to histological

analysis, which revealed no remnant dysplasia (● Fig. 4). This outcome was confirmed in the biopsy samples taken from the rectal scar 3 months later (● Fig. 5). EUS and CT further confirmed the absence of any disease, and it was decided that no chemotherapy was required.

This case illustrates firstly the feasibility of full-thickness endoscopic resection of early CRC in the distal rectum, where standard surgery would carry considerable risks and require aggressive strategies. Secondly, we evaluated the potential of the novel FTRD in a high risk patient with ongoing anticoagulant therapy, for the first time reporting in detail the long-term clinical and endoscopic outcomes of this advanced endoscopic treatment.

Endoscopy\_UCTN\_Code\_TTT\_1AQ\_2AD

**Competing interests:** None

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