Endoscopic submucosal dissection of appendiceal lesions by using a novel adjustable traction device: A-TRACT-2

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Endoscopic submucosal dissection (ESD) allows for en bloc resection of various lesions of the GI tract.[1] Nonetheless, the technical difficulty of the procedure limits its widespread adoption, especially in the appendix where the procedure remains a challenge, even for experienced operators, combining an often-bad exposition and difficult access to the submucosa, frequently compromising R0 resection. Thus, several tools, including traction devices, have been developed to assist the intervention,[2-4] but they all tend to lose traction force as the intervention progresses. Thus, an adjustable endoscopic traction system (A-TRACT), like the A-TRACT-2, with adaptative traction could be particularly useful in this area, providing continuous optimal exposure of the submucosa during ESD.

We describe here the use of a new traction device, A-TRACT-2, that is both easy to use and adjustable, thus very useful in hard technical cases (Video 1, available online at www.giejournal.org). It is composed of 2 arms made of suture wire, linked to an orthodontic rubber band. Each arm is separated in several loops by knots. The farthest loops noted (1 and 2, as seen in the video) will be anchored to the lesion by endoscopic clips. A barbed suture wire passes through the middle loop of both arms, and then through an additional ring linked to the rubber band (4, as seen in the video). The barbed suture wire is then tied with a running knot, which is a 1-way knot because of the protrusions on the wire (6, as seen in the video). To provide initial traction, the operator will grab the rubber band with an endoscopic clip and fix it to the opposite wall of the colon. When needed, the operator can grab the tightening loop (7, as seen in the video) with a clip or a foreign body grasper, and pull it in the accessory channel, closing

Abbreviations: A-TRACT, adjustable endoscopic traction system; ESD, endoscopic submucosal dissection.

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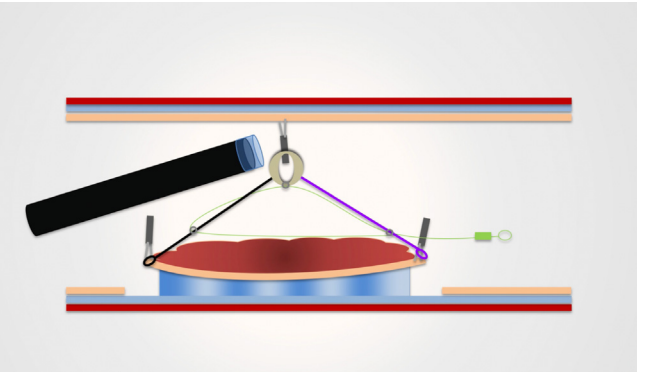

Figure 1. Initial traction.

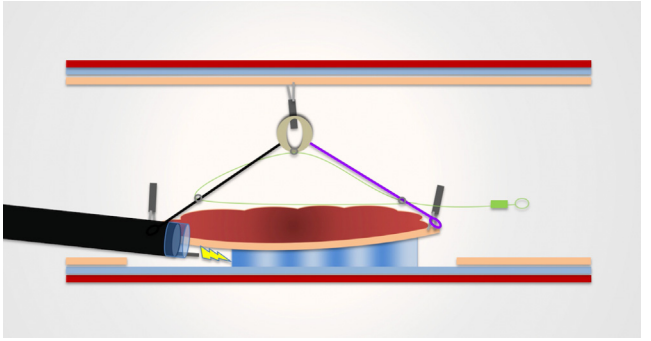

Figure 2. Dissection starts, and traction begins to decline.

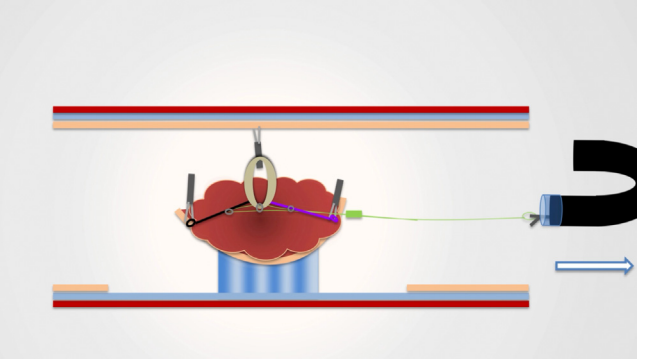

Figure 3. Tightening of the device to renew optimal traction.

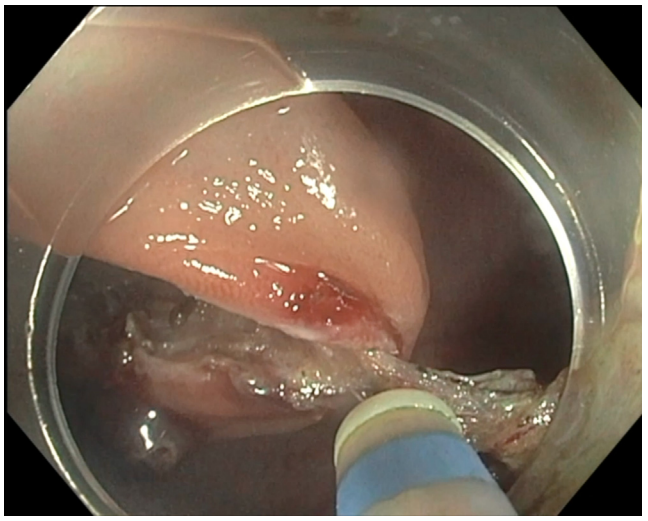

Figure 4. The bottom of the appendix is being pulled out because of strong growing traction.

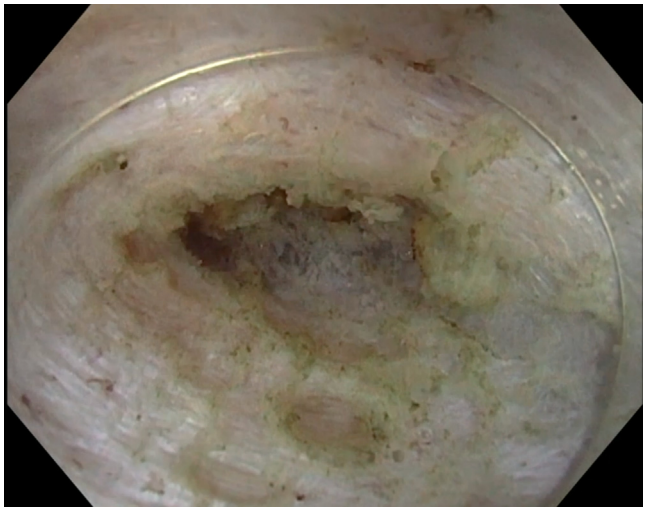

Figure 5. Cleared appendiceal duct.

the distance between both the anchoring points and the rubber band ring. This causes the lesion to fold on itself, but also stretches the rubber band, working like a pulley to increase traction.

We report here the case of 2 patients, a 69-year-old and a 72-year-old, with periappendiceal polyps. The first step of the procedures was to make a peripheral incision. We grasped the A-TRACT device with a clip (Boston Resolution 360;) and then delivered it to the operating site through the accessory channel. Then, we used the clips to set the device to both poles of the lesion. Afterward, we took another clip to fix the rubber band to the opposite wall (Fig. 1). Initial traction was obtained, and we began dissecting (Fig. 2). When the operators thought traction was not strong enough anymore, they tightened the devices, renewing optimal traction (Fig. 3). The submucosal exposure was ideal until the

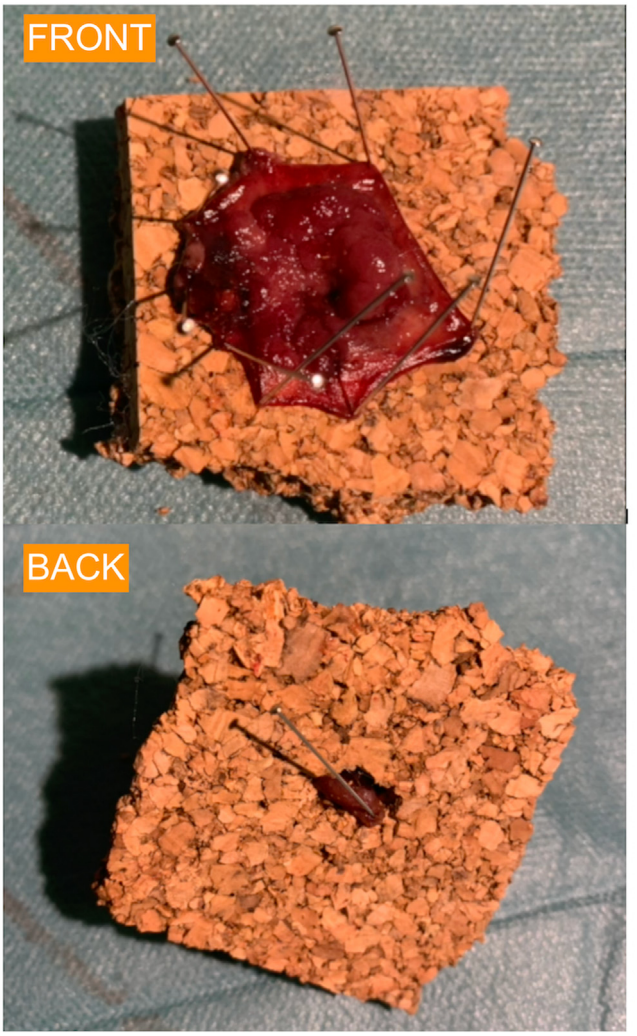

Figure 6. First resected lesion.

Figure 7. Second resected lesion.

end of the procedures. We witnessed a traction tension strong enough to bring out the bottom of the appendix (Fig. 4), allowing us to clear all the appendiceal duct (Fig. 5). This technique allowed a curative R0 resection of the lesions (Figs. 6 and 7). The defects were closed with endoscopic clips. Pathology concluded 2 lesions, 30 to 25 mm and 25 to 17 mm, containing adenoma in low-grade dysplasia. There were no adverse events during follow-up.

To our knowledge, this is the first time an adjustable traction system has been used in the human appendix. This technique seems attractive, especially in difficult locations. Further studies are needed to confirm its effectiveness.

DISCLOSURE

Dr Rostain is a consultant for Ipsen PHARMA. Dr Rivory is a consultant for Olympus and Boston Scientific. Dr Jacques is a consultant for Pentax Medical and Norgine SAS. Dr Pioche is a consultant for Boston Scientific and Olympus. All other authors disclosed no financial relationships.

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