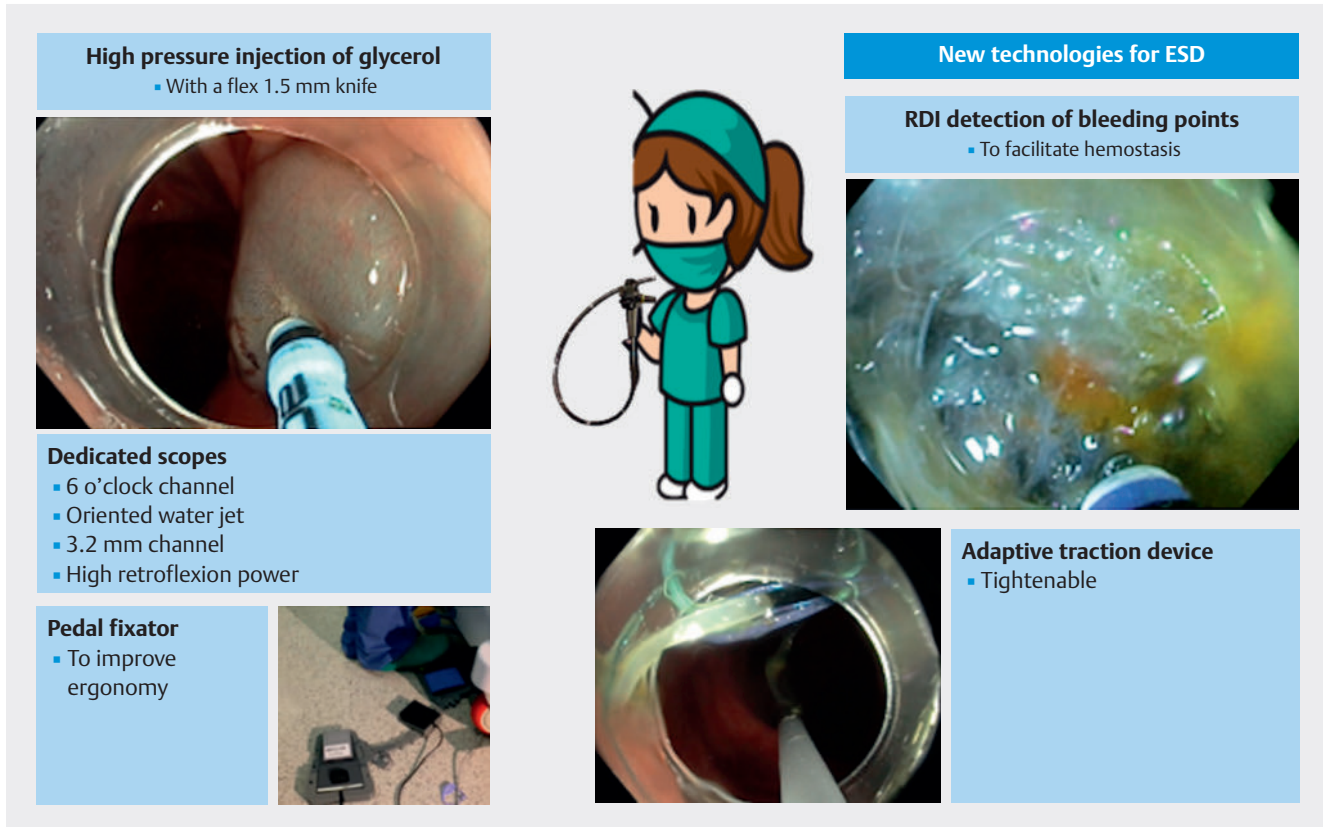


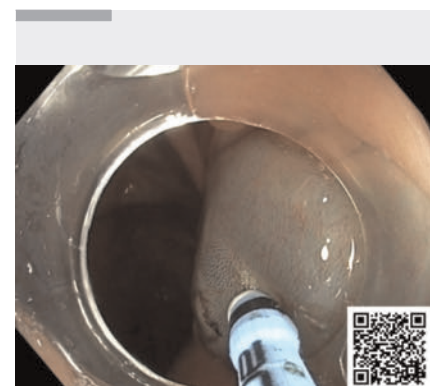
Innovations for colonic endoscopic submucosal dissection: combination of the latest game changers



► **Fig. 1** New game changers for endoscopic submucosal dissection. Flex knife for high pressure jet injection of macromolecules. Adaptive multipolar traction. Improved ergonomomy with a pedal fixator. Red dichromic imaging (RDI) for the detection of bleeding points.

Endoscopic submucosal dissection (ESD) in 2023 is nothing like it was originally in 2001, with major changes in equipment and strategies. However, the spread of ESD has been slow because it is a challenging procedure, and major new developments are expected to simplify it further. We present a case of ESD of a nongranular laterally spreading tumor in the right colon angle, using a combination of the latest technological developments (► **Fig. 1**, ► **Video 1**) to simplify the main difficulties of the procedure. We used a pediatric therapeutic colonoscope (PCF 190L; Olympus, Tokyo Japan) with a 3.2-mm operating channel located in the 6 o'clock position with waterjet function. While high-pressure injection

of macromolecules was possible with some devices [1] such as the Erbe jet (Erbe, Tübingen, Germany) [2], the rigidity and size of the knife made dissection of the very thin colonic (rectal) submucosa difficult. With the arrival of the new Hybrid flex knife (Erbe), the flexibility and finesse of the electrode are now close to those of the most commonly used colonic knives (e. g. DualKnife; Olympus), and allow application of high pressure to the colon. However, exposure remains a key factor, and the use of a multipolar adaptive traction device (ATRACT; Hospices civils de Lyon, Lyon, France) remains essential for creation of triangulation and adjustment of traction during the procedure [3]. Ergonomics is surely also



► **Video 1** New game changers for endoscopic submucosal dissection.

one of the keys to this procedure, and pedal management needs to be improved to avoid pedal errors and to make it easier to locate the correct pedal without the need to look down at the feet. To this end, the IPEFIX pedal fixator has already demonstrated its effectiveness in reducing the number of pedal errors, and the need to look at the feet, in a prospective randomized study [4].

Finally, managing bleeding through early detection is a key factor in reducing operating time and operator fatigue, and in this respect, red dichromic imaging (RDI; Olympus) is a valuable aid in achieving hemostasis quickly and reducing endoscopist stress [5].

New game-changing innovations for ESD and their combined use could improve the accessibility and dissemination of the technique, without skipping organized and effective training.

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Conflict of Interest

J. Rivory, J. Jacques, R. Legros, T. Wallenhorst, and M. Pioche are co-founders of the ATRACT device, and also consultants for Olympus, Pentax, Erbe, and Boston for training in ESD. L.-J. Masgnaux is the inventor of the ATRACT device. The Ipefix patent is the property of the institution Hospices civils de Lyon. J. Albouys declares that he has no conflict of interest.

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