

CASE REPORT

Underwater hybrid endoscopic submucosal dissection in a rectal polyp: a case report of a new application of “underwater endoscopy”

Joaquín Rodríguez-Sánchez, Margarita Úbeda-Muñoz, Eva de-la-Santa-Belda, Pilar Olivencia-Palomar and José Olmedo-Camacho

Endoscopic Unit. Hospital General Universitario de Ciudad Real. Ciudad Real

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Correspondence: Joaquín Rodríguez Sánchez. Endoscopic Unit. Hospital General Universitario de Ciudad Real. C/ Obispo Rafael Torija, s/n. 13005 Ciudad Real, Spain. **e-mail:** joakinrodriguez@gmail.com

ABSTRACT

Background: Hybrid endoscopic submucosal dissection (ESD) has been described as an alternative to traditional ESD. This technique is less time consuming, but the en bloc resection rate is lower than in ESD. Similar to endoscopic mucosal resection, the underwater technique could improve preliminary disadvantages of hybrid ESD.

Case report: We attempted a mixture resection technique of Hybrid ESD with underwater endoscopic mucosal resection (EMR). Using this approach, an underwater hybrid ESD was successfully performed without adverse events on a 71 year old woman with a 20 mm adenoma. The histologic analysis identified a tubulovillous adenoma with high grade dysplasia and tumor free margins.

Discussion: Underwater hybrid ESD could be an alternative to ESD. Moreover the modification of the “underwater method” provides a suitable way to overcome the technical drawbacks of the hybrid ESD.

Key words: Endoscopic submucosal dissection. Underwater EMR. Hybrid dissection.

BACKGROUND

Endoscopic submucosal dissection (ESD) is the standard treatment for large gastric and colorectal lesions with a high risk of intra-mucosal and superficial submucosal cancer (1). However in western countries, there is no wide spread procedure due to the long learning curve (especially in colon) (2), the high risk of adverse events and length of the procedure (an average of 54 to 116 minutes per procedure) (3). Hybrid ESD is a feasible alternative for the treatment of colorectal polyps. The procedure consists of an initial circumferential incision, followed by the resection of the remaining tissue with a snare (4). This procedure has several advantages, submucosal dissection is the most difficult step in ESD and with this method it is much easier. In addition, this technique is significantly quicker than the traditional procedure. However, retrospective non-randomized

studies with Hybrid ESD have shown lower rates of en bloc resections than with ESD (4,5).

On the other hand, underwater endoscopic mucosal resection (UEMR) has been described as an alternative to endoscopic mucosal resection (EMR) without the performance of a submucosal cushion (6). This technique has recently shown amazing results, even in appendicular orifice and scarred polyps, with a low complication rate and a high en bloc resection rates compared to EMR (7). Therefore, the underwater strategy could help to overcome the technical disadvantages of hybrid ESD.

CASE REPORT

A 20 mm granular type lateral spreading tumor was found in the rectum, 3 cm from the dental line in the context of a colorectal cancer screening program, in a 71 year-old woman without any relevant medical history. Chromoendoscopy with Indigo carmine (0.5%) showed a regular Pit Pattern type IV lesion. Underwater hybrid ESD was performed after the patient had signed an informed consent. Firstly, a Splash-M Knife (Pentax Medical, Tokio, Japan) was used for the circumferential incision. Three hundred mL of saline was infused immediately until a complete lumen filling was achieved. The remaining tissue was easily snared using a 30-mm oval Captivator Snare (Boston Scientific, Costa Rica) without injecting any solution into the submucosal layer, due to the “floating effect” of the lesion submerged in saline. The resection was performed using an endocut Q current (effect 3, duration 1, interval 6) with an ERBE vio200 electrosurgical unit (ERBE, Tuebingen, Germany) (Fig. 1). The procedure was completed in 15 minutes without any adverse event. The resected spec-

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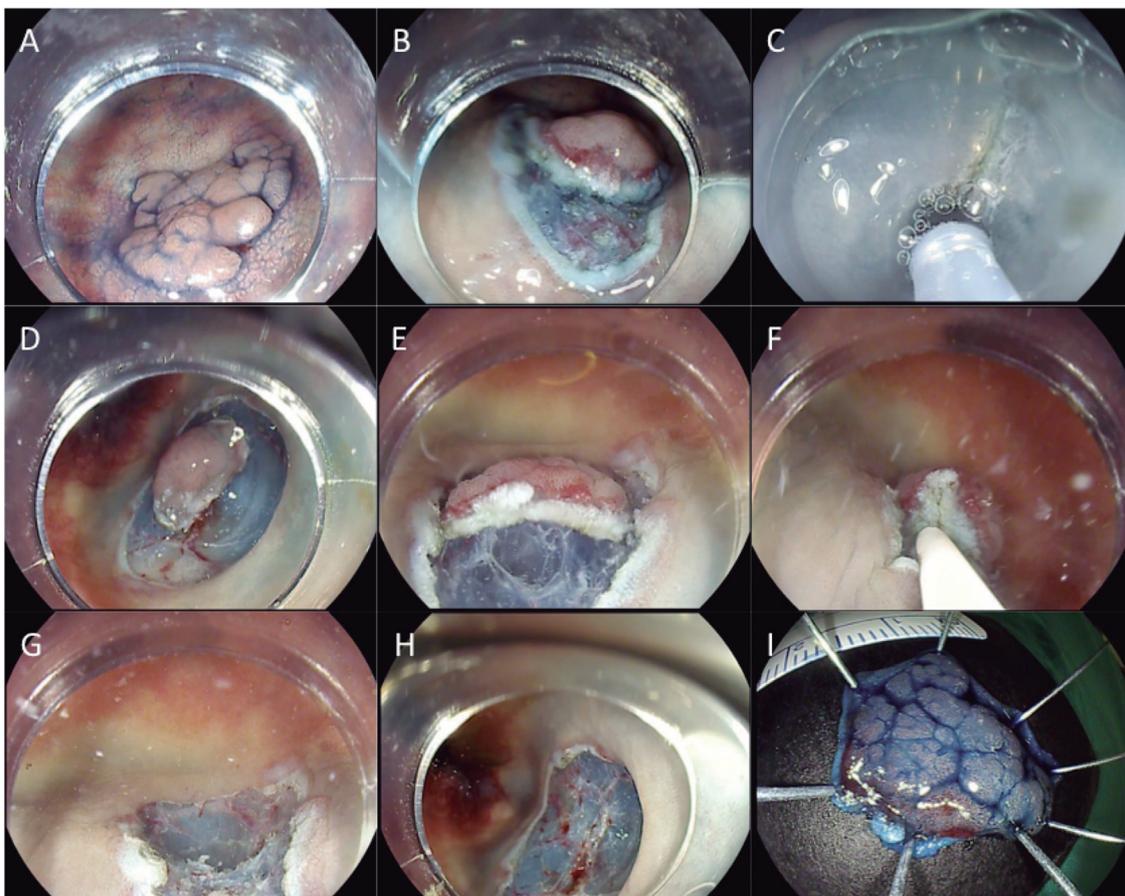


Fig. 1. Underwater hybrid ESD procedure: A-D. Initial steps of hybrid ESD (circumferential incision). E-F. Underwater Hybrid ESD resection phase. G. Submerged scar. H. Scar with rectal distension without saline. I. Extended specimen.

imen was sent to the pathology department and finally diagnosed as tubulovillous adenoma with high grade dysplasia, deep and lateral free margins. A follow up endoscopic assessment was performed three months after the procedure and there was no residual tissue or recurrent adenoma.

DISCUSSION

Despite the theoretical advantages of hybrid ESD, the reported outcomes have been unsatisfactory, mainly due to the rates of en bloc resection compared to ESD (64% vs 87%) (4). The main reason for this is due to the difficulty to fit the snare into the oral edge of the lesions. Moreover, circumferential incision results in a loss of thickness in the submucosal layer due to the dispersion of injected fluid. For this reason, current trends in ESD avoid a complete circumferential incision and tricks are performed such as "the pocket-creation technique" during the initial steps (8). With regard to hybrid ESD, submucosal thickness is essential to grasp the polyp with a snare, as is the amount of non-dissected tissue. In recent randomized controlled trials, a non-dissected area of < 15 mm was required to achieve the goal of an en bloc resection. However, this issue implies a phase of "pure" submucosal dissection with the risk of adverse events in some cases (9). This undesirable likelihood could be avoided by using the underwater method,

which has been shown to be safer than traditional EMR and also easier to perform (7,10).

In summary, in order to fill the gap between these different techniques, an underwater hybrid ESD was performed. The aim was to obtain an en bloc specimen, avoid complications and the long procedure time of ESD and also to overcome the technical disadvantages of hybrid ESD. The positive outcome in this case must be validated in more cases in order to assess its efficacy as an alternative to ESD.

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