Underwater endoscopic mucosal resection for complete R0 removal of a residual adenoma at a perforated scar in a patient with colostomy

Endoscopic mucosal resection (EMR) of residual polyps is technically challenging, as submucosal fibrosis from the initial resection makes it difficult to lift the lesion during submucosal injection and to snare the entire tumor [1]. Endoscopic submucosal dissection (ESD) enables complete removal of such residual polyps [2] but presents some technical difficulties and is time-consuming [3].

An 82-year-old man with permanent sigmoidostomy was referred to our unit because of a residual polyp in the descending colon, seen at the 18-month surveillance test after EMR at another hospital. Perforation had occurred during EMR, and clip closure had been performed. Colonoscopy through the sigmoidostomy showed a 12-mm polyp surrounded by multiple widespread scars on the dorsal side 20 cm proximal to the colostomy (▶Fig. 1). The lesion was diagnosed as an adenoma (▶Fig. 2a,b). Complete removal by ESD was considered difficult [4]. First, there was the possibility of severe and widespread submucosal fibrosis because of multiple deep ulcer scars. Second, traction would have to be limited, since it is difficult to change the position of a patient with a colostomy. Third, the polyp was difficult to visualize because of a collapsed colon wall caused by gas leakage through the colostomy. We therefore performed underwater EMR (▶Fig. 3 and ▶Fig. 4, ▶Video 1) [5]. En bloc resection without complications was achieved within 15 minutes. Histopathological examination showed an adenoma with negative resection margins (▶Fig. 5).

There were three advantages to using water immersion in the underwater EMR. First, water immersion allowed us to “float” the lesion away from the muscularis layer, allowing wide-field resection of the entire polyp and scars (▶Fig. 4). Second, underwater EMR eliminated the...
need for the assistance of gravity. Finally, underwater EMR significantly improved endoscopic visualization (Fig. 3). In summary, underwater EMR can be considered as a safe, time-saving, and effective option when the nature of a lesion makes it difficult to perform ESD.

Endoscopy_UCTN_Code_TTT_1AQ_2AD

Competing interests
None

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DOI http://dx.doi.org/10.1055/s-0043-104520
Endoscopy 2017; 49: E121–E122
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Stuttgart · New York
ISSN 0013-726X

Fig. 3 After the area around the polyp had been marked with dots, saline was infused to provide stable and clear visualization.

Fig. 4 The entire polyp could be captured using a wide-field snare because of the “floating” effect created by water immersion.

Fig. 5 The histopathologic image showed an adenoma with negative resection margins.