Underwater endoscopic mucosal resection of a laterally spreading tumor overlying a previous endoscopic carbon tattoo

A 53-year-old man with no relevant past medical history was referred to our department for resection of a laterally spreading tumor (LST) on the descending colon, which had been tattooed previously.

The procedure was performed with a transparent cap attached to the tip of the colonoscope (Q185; Olympus Medical Systems, Tokyo, Japan), with the patient under deep propofol sedation. A 40-mm nongranular, homogeneous LST was identified, overlying a previously placed carbon tattoo (Fig. 1), with resulting severe fibrosis that precluded elevation for conventional endoscopic mucosal resection (EMR). Therefore, underwater piecemeal EMR was performed, after marking the lesion limits with snare tip coagulation (Video 1). Complete resection was achieved without complications. The procedure exposed involvement of almost all of the submucosa by the ink (Fig. 2). The patient was discharged on the same day.

Histopathological analysis revealed a tubular adenoma with low grade dysplasia, and with carbon pigment in the margins of most fragments. On surveillance colonoscopy 3 months later, the scar had no endoscopic or histological recurrence (Fig. 3).

Endoscopic tattooing is a widely used technique to facilitate the identification of colorectal lesions for subsequent endoscopic or surgical treatments [1, 2]. However, tattooing has been associated with clinically significant complications, including peritonitis [1, 2]. Additionally, tattooing under a lesion can result in technical difficulties because of associated submucosal fibrosis, which makes endoscopic resection procedures hazardous and has contributed to perforation [1–3]. In fact, carbon particles can spread across a significant distance within the submucosal plane; it is therefore recommended that tattoos are placed 2–3 cm anatomically distal to the lesion [1, 2]. Underwater EMR has been shown to be a useful technique for lesions that are difficult to resect, including those associated with fibrosis [4, 5]. In the present report, we present the first case of a successful underwater EMR of a lesion associated with fibrosis secondary to tattoo.

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Fig. 1 On the descending colon, a 40-mm nongranular, homogeneous, laterally spreading tumor (LST) was identified, overlying a previously placed carbon tattoo. a White-light imaging. b Narrow-band imaging.

Fig. 2 Endoscopic image showing the involvement of almost all of the submucosa beneath the scar by the carbon ink.

Fig. 3 Surveillance colonoscopy 3 months later showed the scar with no signs of recurrence. a White-light imaging. b Narrow-band imaging.
Video 1 Underwater piecemeal endoscopic mucosal resection of a laterally spreading tumor overlying a previous endoscopic carbon tattoo with associated severe fibrosis.

Competing interests
None

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References