Successful endoscopic treatment of an appendicocutaneous fistula using endoloops

An appendicocutaneous fistula is a rare complication of appendectomy [1]. Moreover, the fistula can persist [2]. A 52-year-old man presented to our department with a 3-month history of purulent abdominal wall sinus that developed after appendectomy 3 months ago. Abdominal wall radiography revealed an abdominal wall fistula connecting with the ileocecal region (▶Fig. 1). Under colonoscopy, we identified the swollen and purulent appendix stump with black stitching residue (▶Video 1). After repeated washing of the appendix stump (▶Video 1), milky pus remained around the stitching residue (▶Fig. 2). Using grasping forceps, we easily removed the stitching residue (▶Video 1). Saline solution with methylene blue was injected from the ostium of the abdominal wall fistula, and the inlet of the fistula was detected at the appendix stump (▶Fig. 3). Normal saline was then injected repeatedly from the abdominal outlet of the sinus to wash the fistula (▶Video 1). After washing, we released a nylon ring into the ileocecal region (▶Video 1). Eight clips were used to fasten the nylon ring around the inlet of the fistula at the appendix stump (▶Video 1). We then

▶Video 1 Appendicocutaneous fistula treated using endoscopic endoloops.

▶Fig. 1 Abdominal wall radiograph showing the abdominal wall fistula connected with the ileocecal region.

▶Fig. 2 Milky pus around the stitching residue.

▶Fig. 3 Inlet of the fistula at the appendix stump.

▶Fig. 4 Closing of the fistula inlet using endoloops.

▶Fig. 5 Inlet of the fistula healing 2 weeks after treatment.
tightened and released the nylon ring (▶ Fig. 4). Methylene blue dye was again injected from the abdominal wall sinus outlet (▶ Video 1); the dye was refluxed back, and the ileocecal region did not show methylene blue. We found two outlets of the fistula (▶ Video 1). Two drainage tubes were placed at the outlets (▶ Video 1). Two weeks later, we noted that the inlet and the outlets of the fistula were healing (▶ Fig. 5). The use of endoscopic endoloops is a new strategy to promote healing of an appendicocutaneous fistula without surgery.

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**Competing interests**

The authors declare that they have no conflict of interest.

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