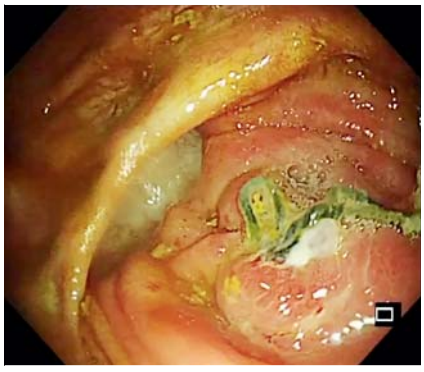
Successful endoscopic treatment of an appendicocutaneous fistula using endoloops

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

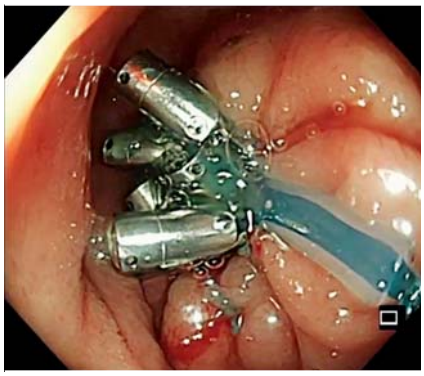
Video 1 Appendicocutaneous fistula treated using endoscopic endoloops.

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 tightened

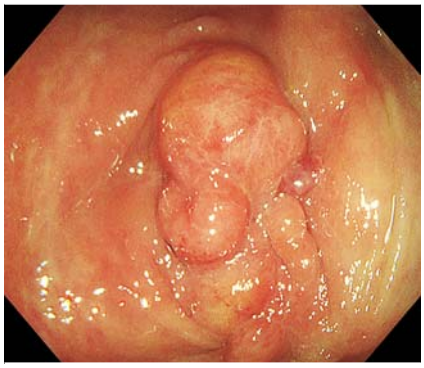


▶ **Fig. 2** Milky pus around the stitching residue.

▶ **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.

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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