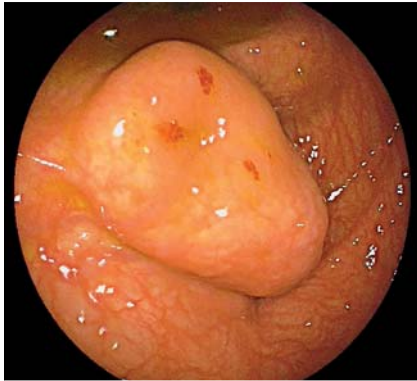


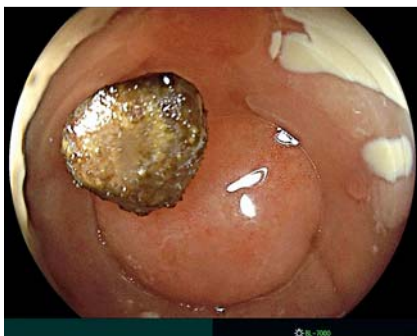
## Application of an appendoscope in chronic appendicitis



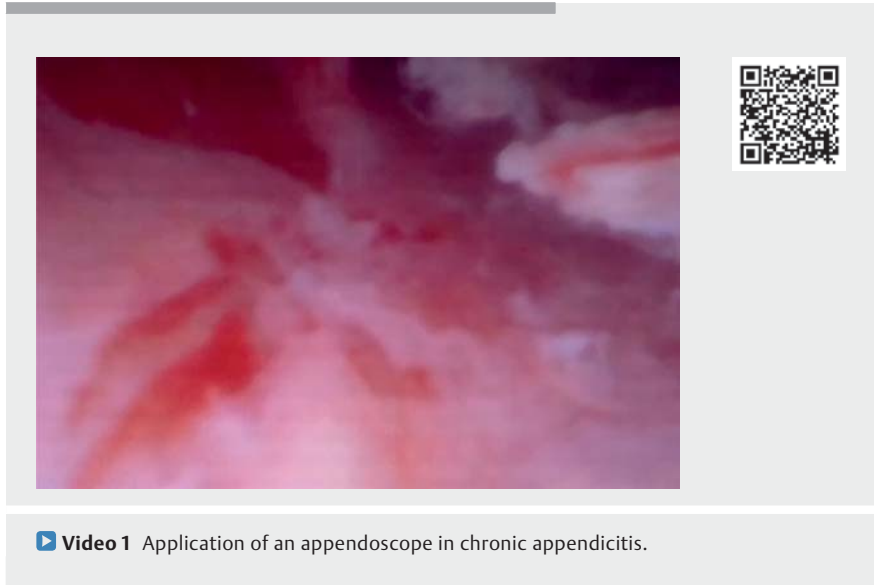
► **Fig. 1** A submucosal bulge in the ileocecal area (suspected lipoma).



► **Fig. 2** A 2 cm × 3 cm submucosal bulge, with smooth mucosa at the ileocecal junction and pus at the appendiceal orifice.



► **Fig. 3** A 1.5 cm × 1.0 cm appendicolith was extracted using a retrieval basket.

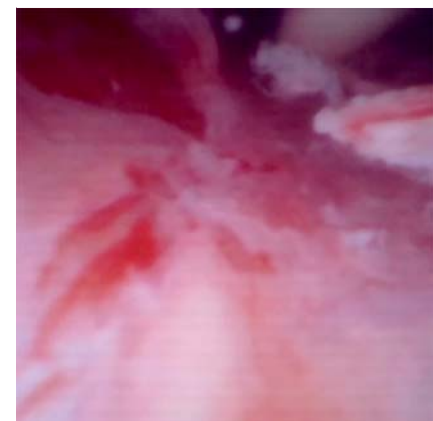


► **Video 1** Application of an appendoscope in chronic appendicitis.

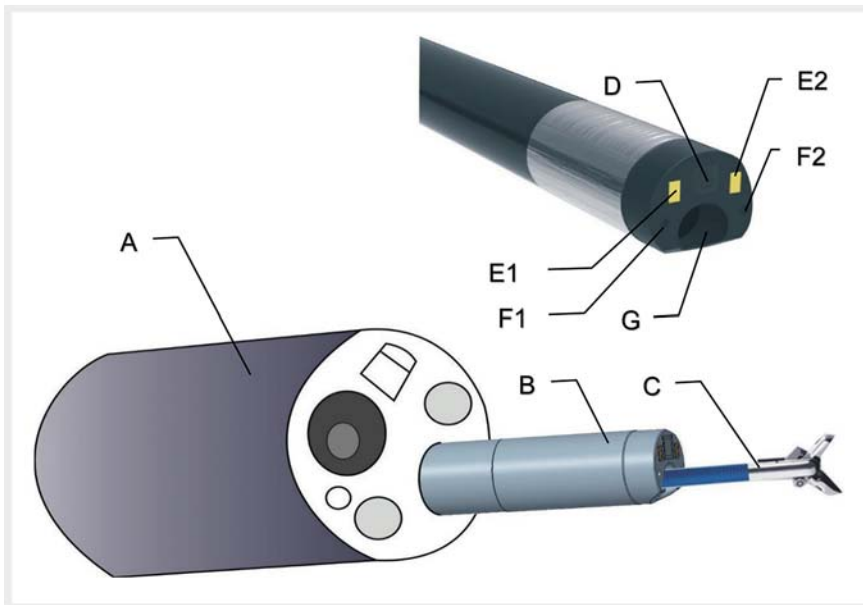
A 73-year-old woman presented with a 10-year history of abdominal pain. Computed tomography showed swollen soft tissue in the ileocecal area. Colonoscopy showed a submucosal bulge in the ileocecal area (suspected lipoma) (► **Fig. 1**). After completing relevant examinations, colonoscopy was repeated (► **Video 1**) and showed a 2 cm × 3 cm submucosal bulge, with smooth mucosa at the ileocecal junction and pus at the appendiceal orifice (► **Fig. 2**). After aspirating the pus, an incarcerated fecal stone was observed at the appendiceal orifice. The 1.5 cm × 1.0 cm appendicolith was extracted using a retrieval basket (► **Fig. 3**). The appendoscope was inserted into the appendiceal lumen, and revealed apparent mucosal hyperemia, swelling, and local erosion (► **Fig. 4**). The patient's abdominal pain subsided after the operation and she was discharged a week later.

In this case, we observed the appendiceal lumen using an appendoscope and administered the necessary treatment

based on endoscopic retrograde appendicitis therapy. We successfully developed a special endoscope, which has received ethical approval and has undergone clinical trials; this was the first clinical application. The appendoscope is a disposable digital system that operates



► **Fig. 4** The appendiceal lumen showed apparent mucosal hyperemia, swelling, and local erosion.



► **Fig. 5** The newly developed appendoscope. A, head end of the colonoscope; B, the appendoscope; C, biopsy forceps; D, charge coupled device; E1 and E2, LED light source; F1 and F2, flushing channels; G, clamp channel.

through the colonoscope clamp channel and incorporates an LED light source (► **Fig. 5**). The outer sheath tube diameter is 3.3 mm or 2.6 mm. It has one clamp channel (diameter 2.0 mm or 1.2 mm), two flushing channels, and the head end of the outer sheath can be adjusted in multiple directions. The appendoscope can avoid the harm of intraoperative radiographic fluoroscopy to patients and operators. Compared with the SpyGlass DS (Boston Scientific, Marlborough, Massachusetts, USA), the appendoscope has a more stable imaging system and a significant price advantage (USD500 vs. USD3000 for SpyGlass). We are currently developing special biopsy forceps, stents, and other accessories. This appendoscope is expected to become an impor-

tant tool for the diagnosis and treatment of appendiceal diseases.

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### Competing interests

The authors declare that they have no conflict of interest.

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### Bibliography

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