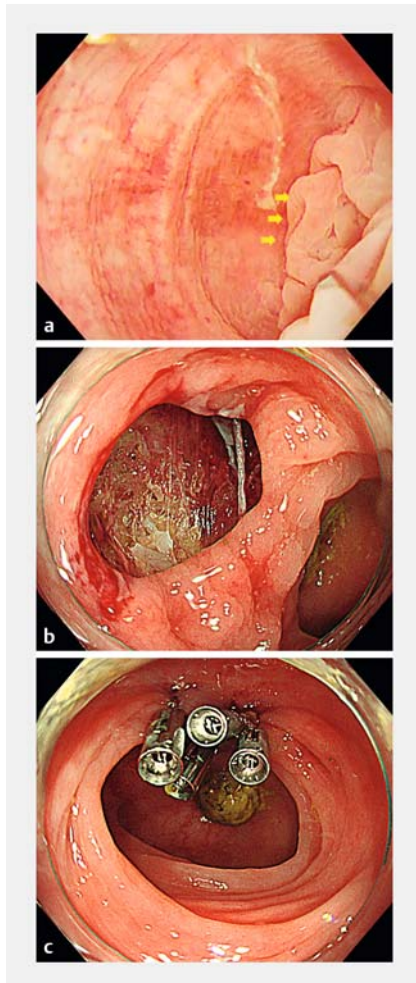


Iatrogenic colorectal perforation caused by a clip

OPEN
ACCESS

► **Fig. 1** Endoscopic images showing: **a** a small depression in the mucosa (yellow arrows) that appears to be a diverticulum in the sigmoid colon where the tip of the clip got caught; **b** a perforation in the diverticular area, which lacked a muscle layer; **c** the perforation closed completely with four clips.

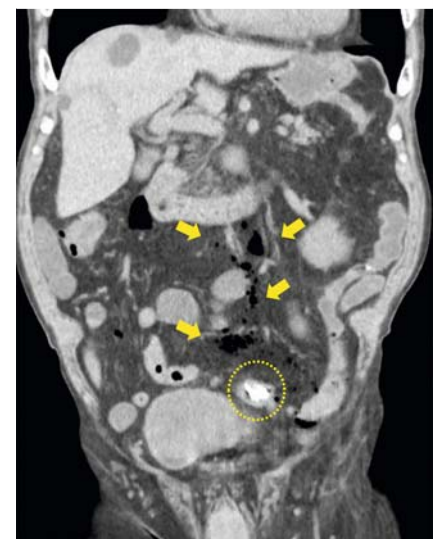
An iatrogenic colonic perforation (ICP) is a significant incident associated with colonoscopy, with recent guidelines detailing a treatment-related incidence of 0.02%–8% [1]. Although clips are frequently used to suture perforations [2], ICPs caused by the clips themselves have not previously been reported. Here, we



► **Video 1** Iatrogenic colorectal perforation at a diverticulum caused by a clip that was being placed following endoscopic mucosal resection performed by a trainee.

describe a case of an ICP occurring during endoscopic treatment that was caused by a clip in a colonic diverticulum.

A man aged in his eighties was referred to our hospital for treatment of colonic polyps. Colonoscopy revealed multiple colonic diverticula in the sigmoid colon. A trainee with less than 1 year of experience had attempted to use a clip to close the ulcer after endoscopic mucosal resection of a 5-mm *Is* polyp in the patient's sigmoid colon. During the procedure, the scope was frequently pulled out toward the anal side owing to enhanced peristaltic spasm of the colon. During reinsertion with the clip opened, a laceration occurred in the mucosa because the metal part of the tip of the clip got caught in a small depression of a colonic flexure (► **Fig. 1 a**; ► **Video 1**). No muscular layer was observed in the mucosal defect, consistent with a diagnosis of perforation at the diverticular site (► **Fig. 1 b**). The wound was completely closed with clips (► **Fig. 1 c**). A computed tomography (CT) scan of the abdomen taken after the examination showed air leakage outside of the colon (► **Fig. 2**). The patient was



► **Fig. 2** Image from a computed tomography scan performed immediately after the colonoscopy showing the clip used to suture the perforation of the sigmoid colon (dotted yellow line) and air leakage outside of the colon (yellow arrows).

discharged after 1 week of conservative treatment.

We report a case of ICP at a colonic diverticulum caused by a metal clip tip. As has been previously reported in endoscopic treatment of tumors involving diverticula, diverticula lack or have a thin muscle layer [3,4]. Devices such as clips should be retracted into the forceps channel of the endoscope or the attachment hood before their insertion into the flexure of the colon, especially in patients with diverticula.

Endoscopy_UCTN_Code_CPL_1AJ_2AG

Competing interests

The authors declare that they have no conflict of interest.

The authors

Hirotaoka Oura , **Yasuki Hatayama, Erika Nomura, Harutoshi Sugiyama, Daisuke Murakami** , **Makoto Arai, Takayoshi Nishino**
Department of Gastroenterology, Tokyo Women's Medical University Yachiyo Medical Center, Chiba, Japan

Corresponding author

Hirotaoka Oura, MD
Department of Gastroenterology, Tokyo Women's Medical University Yachiyo Medical Center, Owadashinden 477-96, Yachiyo-City, 276-8524, Japan
onmc134@gmail.com

References

- [1] de'Angelis N, Saverio SD, Chiara O et al. 2017 WSES guidelines for the management of iatrogenic colonoscopy perforation. *World J Emerg Surg* 2018; 13: 5
- [2] Magdeburg R, Collet P, Post S et al. Endoclippping of iatrogenic colonic perforation to avoid surgery. *Surg Endosc* 2008; 22: 1500–1504
- [3] Fu KI, Hamahata Y, Tsujinaka Y. Early colon cancer within a diverticulum treated by magnifying chromoendoscopy and laparoscopy. *World J Gastroenterol* 2010; 16: 1545–1547
- [4] Ikezawa N, Toyonaga T, Tanaka S et al. Feasibility and safety of endoscopic submucosal dissection for lesions in proximity to a colonic diverticulum. *Clin Endosc* 2022; 55: 417–425

Bibliography

Endoscopy 2023; 55: E1091–E1092
DOI 10.1055/a-2163-2290
ISSN 0013-726X
© 2023. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution License, permitting unrestricted use, distribution, and reproduction so long as the original work is properly cited. (<https://creativecommons.org/licenses/by/4.0/>)
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany



ENDOSCOPY E-VIDEOS

<https://eref.thieme.de/e-videos>



E-Videos is an open access online section of the journal *Endoscopy*, reporting on interesting cases

and new techniques in gastroenterological endoscopy. All papers include a high-quality video and are published with a Creative Commons CC-BY license. *Endoscopy E-Videos* qualify for HINARI discounts and waivers and eligibility is automatically checked during the submission process. We grant 100% waivers to articles whose corresponding authors are based in Group A countries and 50% waivers to those who are based in Group B countries as classified by Research4Life (see: <https://www.research4life.org/access/eligibility/>).

This section has its own submission website at <https://mc.manuscriptcentral.com/e-videos>