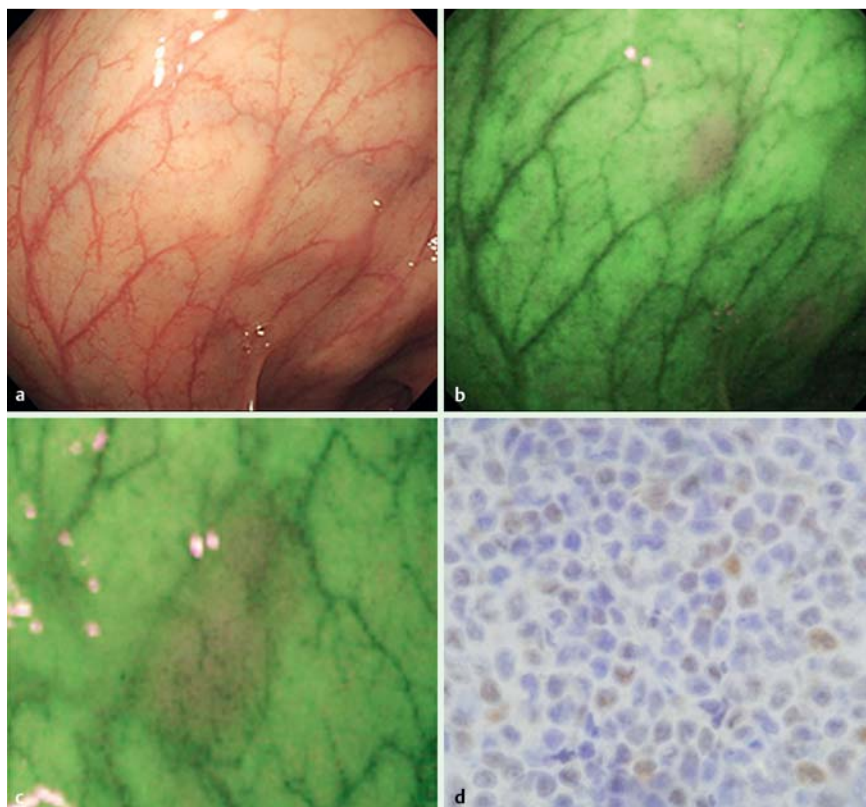


## Recurrent lesion of mantle cell lymphoma in the sigmoid colon detected by endoscopic autofluorescence imaging

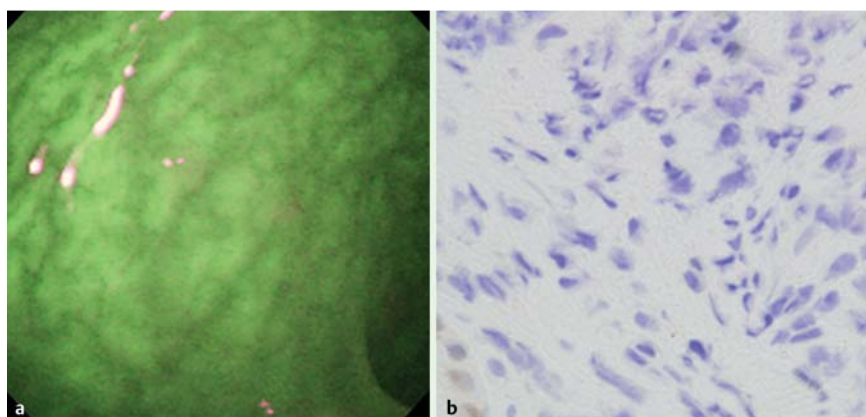
Autofluorescence imaging (AFI) is a novel technology which captures the fluorescence emitted from the gastrointestinal tract. AFI has been reported to improve the detection rate of epithelial neoplasms in the colon [1] and be useful for differential diagnosis of gastrointestinal tract lymphoma lesions [2]. We have recently encountered a case of lymphoma in which recurrent lesions were clearly detected by AFI at quite an early stage.

A 66-year-old man was diagnosed with mantle cell lymphoma at stage IV in 2004. Complete response was achieved after chemotherapy with rituximab, adriamycin, cyclophosphamide, vincristine, and prednisone. He relapsed in 2007, however. At the time, lymphoma cells had infiltrated the sigmoid colon and rectum. He was treated with rituximab, fludarabine, cyclophosphamide, and mitoxantrone, and a second complete response was achieved.

In 2010, a colonoscopy was performed as a follow-up study. Although no abnormal findings were detected by conventional colonoscopy (● Fig. 1 a), AFI detected a magenta-colored area by diminishing the autofluorescence by 7 mm (● Fig. 1 b, c) in the sigmoid colon. A biopsy revealed the infiltration of lymphoma cells that stained positive for cyclin D1 (● Fig. 1 d). The patient was diagnosed with a second relapse and treated with yttrium-90 ibritumomab tiuxetan. AFI findings showed an apparent improvement 2 months after treatment (● Fig. 2 a), and no lymphoma cells were detected by biopsy (● Fig. 2 b). It is sometimes difficult to detect gastrointestinal tract lymphoma lesions by conventional colonoscopy, especially at the early stages of involvement [3,4]. In the present case, however, AFI definitively detected the lesions, and this led to a diagnosis, at an early stage, of relapse of lymphoma. AFI findings after treatment also predicted the disappearance of lymphoma cells. We suggest that AFI is a powerful tool for detecting lymphoma lesions at an early stage and for monitoring lymphoma lesions during treatment.



**Fig. 1** a Conventional endoscopy showed no abnormal findings in the sigmoid colon. b Autofluorescence imaging (AFI) detected a minute magenta area. c Enlarged image of AFI. d Biopsy specimen obtained from the magenta area revealed the invasion of lymphoma cells stained positive for cyclin D1 ( $\times 1000$ ).



**Fig. 2** a Autofluorescence imaging (AFI) detected no magenta lesion in the sigmoid colon after treatment. b Biopsy specimen obtained from the scar showed no invasion of lymphoma cells (cyclin D1,  $\times 1000$ ).

Endoscopy\_UCTN\_Code\_TTT\_1AQ\_2AB

**Competing interests:** None

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**DOI** 10.1055/s-0030-1256776

*Endoscopy* 2011; 43: E330–E331

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ISSN 0013-726X

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